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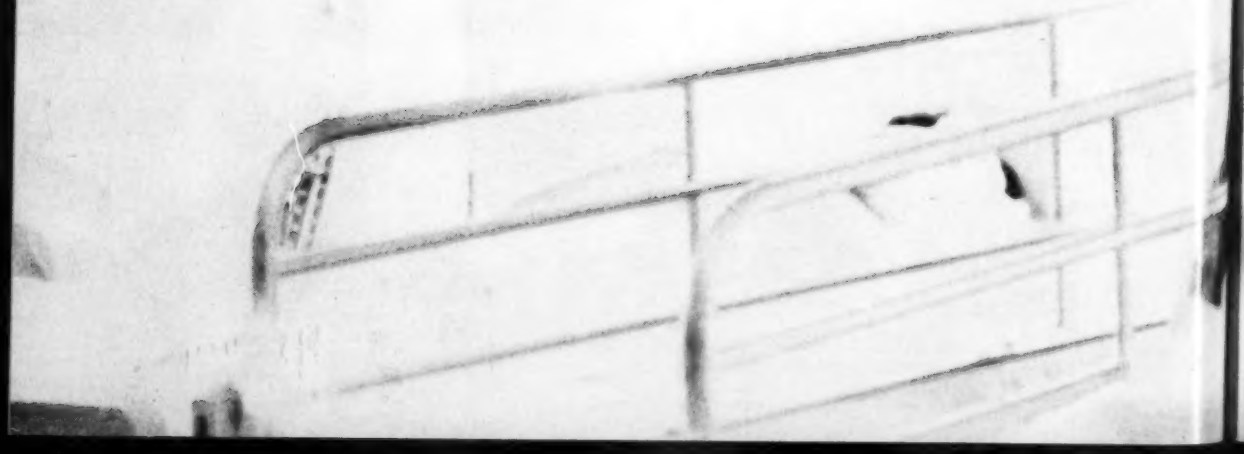

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ARIZONA MEDICINE
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Original Articles

PATHOLOGY OF ABDOMINAL MASSES*

Arthur Purdy Stout, M.D.

New York, N. Y.

I HAVE been on panels before which discussed this subject of the abdominal mass and it has never been possible to do more than scratch the surface. It would not be at all difficult to think of 500 different varieties of abdominal masses, beginning with the over-filled bladder and the pregnant uterus. But we should limit the discussion to neoplasms and some of the lesions that are not neoplasms, but make abdominal masses because differential diagnosis in such cases can be difficult. I have a number of illustrations of different lesions and I shall show them to you as long as my time lasts. Some of these lesions you have heard discussed by Doctor Golden. This, for example, is a so-called pseudo cyst of the pancreas. This term always irritates me because "pseudo" would imply that it is not a cyst, yet actually it is a sac filled with fluid. Just because it is not lined with epithelium, in my opinion does not make it any the less a cyst. It is assumed that these pancreatic cysts not lined with epithelium are the result of trauma with hemorrhage and cavitation. Such cysts are harmless except for the mass and they usually cause pain. The next lesion is a pancreatic lithiasis. This is a lesion which can be recognized roentgenologically. It occurs in cases of chronic pancreatitis and may be associated with carcinoma. For the pathologist the differentiation between chronic pancreatitis and carcinoma may be very difficult. Carcinomas involving the head of the pancreas may arise from pancreatic parenchyma, from pancreatic ducts, from the common duct, the ampulla and the papilla projecting out into the duodenum. Most of these tumors obstruct the common duct and produce obstructive jaundice. One other tumor may involve the head and other parts of the pancreas, namely the islet cell tumor. Most of these are benign and functional but rarely a malignant islet cell tumor may arise in the head of the pancreas. It may be either functional and secrete insulin, or it may be nonfunctional. While the majority of tumors in the liver are metastatic, primary tumors are occasionally found. I am demonstrating a hepatoma in a 60-year-old woman. It did not cause any symptoms and was discovered during a routine physical examination. It was on the under surface of the right lobe and was quite large. Sections showed that the tumor was multicentric. One might suspect that it was metastatic in the liver, because metastases are much more common than primary tumors, but this happened to be a primary tumor and it developed in a cirrhotic organ. The next tumor measured 26 by 20 by 13 centimeters and was found in the liver of a 16-year-old girl. When it was cut open, it had a very fibrous appearance and was so sharply cir-

*Presented before the Arizona Division of the American Cancer Society, Tucson, Ariz., January 1958.

cumscribed that it appeared hemispherical. This is a fibromatosis, which is a benign tumor. It is very rare and this case is unique in my experience. The removal from the liver is now more than five years ago and the girl remains perfectly well.

I will show just one example of a primary tumor in the spleen. This happens to be a reticulum cell sarcoma. This is a remarkable case that had a splenectomy by Doctor John Powers of Cooperstown, N. Y. This woman was 51 years old when the spleen was removed. She remains well 16 years later. That is extremely rare for reticulum cell sarcoma. The appendix may be responsible for many varieties of abdominal mass. The one I show you is the result of the rupture of a mucocele which has resulted in multiple implants on the peritoneum of its mucus-secreting cells. This condition is known as pseudomyxoma peritonei, or jelly belly, and I believe it is always fatal because it is impossible to remove all of the affected peritoneum. The peritoneum itself may give rise to primary tumors both benign and malignant known as mesotheliomas. The malignant variety tends to spread all over the peritoneum and its cells may secrete a mucoid material which is the mucopolysaccharide called hyaluronic acid. It, too, is incurable.

There are benign mesotheliomas which are solitary and make a fibrous mass projecting into the peritoneal space. I show you an example of this that was attached to the peritoneum near the duodenum and was cured by simple excision.

Retroperitoneal Tumors

An endless number of tumor forms develop in the retroperitoneum. I show you an example of a retroperitoneal lymphatic cyst in a 48-year-old woman that was lateral to the descending colon, seven centimeters in diameter and filled with clear, watery fluid. Such cysts are congenital malformations and are more frequently found in children than in adults. The most spectacular retroperitoneal tumors are the lipomas and liposarcomas. I show you a liposarcoma that was 35 x 26 x 13 centimenters and weighed 5 kilos. Although it was seemingly circumscribed when removed from a colored woman, it recurred two years later. This is often the case, so that even the non-metastasizing liposarcomas may prove fatal because of the impossibility of complete removal. Probably the most common of the malignant retroperitoneal tumors are the malignant lymphomas, including lymphosarcoma and Hodgkin's disease.

The third most common retroperitoneal malignant tumor is the leiomyosarcoma. I show you an example in a 55-year-old colored woman. It measured 8 by 5 centimeters, it was in the region of the duodenum and five years after excision she had no recurrence. That is not the usual story; most of them metastasize generally to the liver; sometimes to the regional nodes. There is another tumor that is not quite as malignant as the others. This is a highly specialized tumor of blood capillaries and pericytes called a hemangiopericytoma. In the retroperitoneum about 35 per cent of them are known to have mestatases. The tumor I show you measured 19 by 12 centimeters, and it was partly in the soleus muscle, but chiefly in the retroperitoneal space. Doctor Golden showed you a few pheochromocytomas of the adrenals and this is an adrenal with such a tumor in it. In a 42-year-old woman the benzodioxan test caused a drop in her high blood pressure and aerograms showed the tumor in the region of the right adrenal. This was removed by Doctor George Cahill who has done so much work on adrenal tumors.

Carcinomas of the stomach make abdominal masses that are sometimes palpable, but more often demonstrable by X-ray. The differential diagnosis is aided by a knowledge of the way in which tumor growth alters the morphology of the stomach. Some fungate out into the gastric lumen producing a filling defect. Others penetrate and ulcerate from the start and have to be differentiated from benign peptic ulcers. There is a superficial spreading type that is apt to be associated with a benign peptic ulcer and finally there is a deep spreading type that is accompanied by much fibrous tissue. This stiffens the whole stomach wall producing what is known as linitis plastica or leather bottle stomach. Lymphosarcoma is the commonest variety of gastric sarcoma. It appears in many forms that are apt to imitate carcinoma. The leiomyomas and leiomyosarcomas of the stomach are apt to form intramural masses that form a smooth projecting mass covered with gastric mucosa. Excavation can occur, producing severe and sometimes exsanguinating hemorrhages. Heterotopic pancreatic tissue in the wall of the stomach may also form submucosal masses that project out into the lumen.

In the intestinal tract occur all the varieties of tumor that are found in the stomach and some that are not. Time will only permit me to call your attention to two. Endometrial tissue can be found in both the large and small intestine. I show you an example in which an endometrioma involved the terminal ileum producing a sufficient constriction to cause chronic obstruction. An ileo-colectomy was performed and examination showed endometrial glands in some of the ileocecal lymph nodes. This is an example of benign metastasis which can occur in endometriosis and is not an evidence of malignancy.

Whenever a mass projects out into the lumen of any part of the intestinal tract furnished with a mesentery and the intestinal wall is not stiffened or fixed, intussusception is apt to occur. This may happen when there are a variety of inflammatory, hyperplastic and neoplastic lesions. The example I show you is the result of metastasis from a carcinoma of the breast lodging in the ileum and producing intussusception.

It has been possible to touch upon only a very few of the great variety of tumors and cysts that can make abdominal masses. It would take several days to talk about all of them.

THE HOLISTIC APPROACH IN MANAGEMENT OF SOMATIC SYMPTOMS OF EMOTIONAL ORIGIN

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"There is no cure for the body apart from the mind. First, then, and above all, the mind must be treated if the body is ever to be made whole . . ."

— Plato, Phaedo

• • •

"In the study of man all of the sciences must meet. In medicine, which must be equally concerned with the psychological and social as with the biological and physical, there is the greatest opportunity, as well as necessity, for mutual understanding among representatives of all the sciences."

Frank Fremont-Smith

THE MIND is an ethereal, intangible something which can be approached only through psychologic means, that is, by influencing the patient through precept and discussion.[1]

Psychosomatic medicine is a concept which has been popularized to emphasize the psychic origin of certain physical manifestations. The value of this subject lies in the useless and often long-continued treatment given to the physical symptoms and in the fixation which the patient develops regarding them.[1] This branch of medicine or rather the term "psychosomatic" is fairly recent, but it describes an approach to medicine as ancient as the art of healing itself. This branch of medicine is neither a new discipline nor a new subspecialty, but a return to the old art of thinking of the patient as a "whole" rather than as a collection of malfunctioning organ systems.

Since the time of Virchow who introduced structural concepts and who believed only those diseases he could see under the microscope, medical science began to lose sight of the person. Virchow's concepts led to the dichotomous arrangement between psyche and soma, and hence a consideration of diseases as only a disorder of organs and cells. This dichotomous arrangement saw the beginning of the "so-called specialist" to attend the different distinct maladies; and with the specialist came mechanization of medicine. The medical profession became concerned with physiological mechanisms, stirred by laboratory procedures, the electrocardiogram and other avenues of investigation; but unmoved by and indeed, often holding in contempt the psychologic components of the person, which was thought of as unscientific. Schools of medicine have not properly emphasized psychosomatic medicine. In the past, a good percentage of schools taught psychiatry not as an integrated part of medicine, but as a bizarre, vague and mysterious subject concerned with the classification of the insanities. As a result, after graduation the physician continued to associate the psychiatrist and his patient with mental institutions. However, in the past decade, psychiatry has dispelled its social stigma, divested itself of the fallacy of humbug, misrepresentation and obscurity.[2] There is now a tendency to include psychologic history as part of medical investigation. This includes personality of the patient, fears, hopes, his frustrations, his problems and his manner of handling them.

Psychosomatic medicine is not merely an attempt to blame a psychologic cause for each malady, nor the fact that all illness is "in the head," nor an excuse to omit a careful physical examination. It is a fact that medicine has greatly advanced during the period of scientific awareness, but one must admit that the psychic components have been almost entirely neglected. Psychosomatic medicine can be classified as concerning itself with four general areas. Firstly, the recognition and definitive treatment of psychosomatic disorders of many conditions disguised as medical diseases which tax the physician. Secondly, the study of emotional conflict, a consideration as basic as bacteriology. Long standing tension may cause irreversible disease by disturbing physiology. The absence of an obvious organic cause does not prove the psychogenic origin of symptoms. The criteria for diagnosing psychogenecity are just as rigid for those establishing organicity. Criteria for psychogenecity should have the following: Demonstration

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of a conflictive situation, demonstration to solve it and demonstration of a specific relationship by an association between the conflict and the symptom. The third general area is the problem of the influence of hatred, fear, prejudice and other stresses and strains on the course and outcome of illness. Fourthly, the attempt to study the patient as a "whole" and to assign the relative values to the organic and psychologic factors — not "is this organic or functional," but "what functional factors are significant and what organic factors."[3]

The Interview

The primary diagnostic tool in psychosomatic medicine is the interview. Therapy commences when the patient first makes the appointment and when he enters the physician's office; for at this time the beginning of the patient's confidence in the doctor begins to take place. He will have feelings that he has found a channel of acceptance, sympathy, understanding and the ready willingness of the physician to take time with him as well as use his professional knowledge to aid the patient.[4] The so-called mysticism that has surrounded psychosomatic medicine and the special jargon has undoubtedly scared physicians into believing that interviewing is a highly specialized technique. Actually, any good history is a good psychosomatic history in a sense, and no psychologic history is deemed complete without a comprehensive medical history. The physician cannot practice "holistic" medicine until such time he is able and willing to understand that "psychic" problems may be etiologic factors in numerous functional diseases. Also that functional disturbances are thwarting and often incapacitating and not just perverse nastiness of the patient. The physician must also be aware that emotions may be contributing factors to the cause of certain organic diseases; and that in certain illness the emotional factors play complicating, contributory or confusing roles and finally, that it is not the extent of the objective findings, but how the patient himself perceives his dysfunction that determines his incapacity.[3] The physician should be willing to forego the temptation to use such phrases as, "It's all in your mind," "buck up and be a man," and other such ineffective phrases.

Management of emotional ills is a formidable problem even when there is good rapport i.e. ideal doctor-patient relationship. When the patient for reasons he may not be able to control hinders the doctor's efforts, the physician is required to exert utmost patience and skill to achieve effective treatment. In starting treatment, the first step is the establishment of good rapport. To this end one performs a good general physical examination with greater emphasis on that particular system that disturbs the patient. Usually much laboratory work is done, not because the physician expects to find organic disease, but because he must be in a position of omniscience and must avoid saying, "I cannot swear you do not have a stomach ulcer because all tests have not been made. I only know from my experience that your symptoms are on a psychoneurotic basis." Such statements retard progress and weaken the physician's position. He must say however, that all exhaustive examinations fail to reveal any pathology. When all tests have been done, the patient feels confident that the doctor knows and is not guessing. Prior to the tests however, the doctor states they are expected to be negative.[1]

'Gnothi Seaúton'

Experience has shown that to establish good interpersonal relations, a person must know himself. The physician is constantly involved in personal relationship, and it is essential if treatment is to be effective, that he know himself so that he may seek to understand his patients instead of reacting to them. At the onset, assurance and persuasion is important for the patient has to be supported mentally. Psychopharmacotherapy as an adjunct may be necessary in order to enhance the receptivity of the patient as well as to control or lessen the emotional and behavioral disturbances. The patient must be made to feel that the physician understands his case and is a sympathetic listener.

In a fair majority of cases, a little more knowledge and insight into the whims of emotions would add considerably to the comfort of the patient. An effective aid in the management of these patients is communication. Be an interested listener, not alone to the body but to the human being who has the body. By listening to the patient and talking to him, the therapeutic effort is greatly advanced.[5] Sincere interest inculcates confidence in the patient and allays anxiety. It is not advisable for the physician to talk about himself in an attempt to reassure the patient that he is not alone in his suffering, since it may

act to deter the patient from ventilating further about his problems. Equally reassuring to the fear-laden and anxiety-ridden patient is the feeling that the physician will not condemn him or sit in judgment. It is important that the therapist clearly show concern by a close, kindly and understanding attention. If patients are shown simple human patience and if the doctor possesses a professional confidence that his knowledge and insight into human behavior will add something of value to the patient, an important step toward effective treatment will be accomplished. Above all, there must be an atmosphere of patience and unhurriedness, so that the patient relates his anxieties and fears at his own pace. From all this comes a sense of security. *But a word of advice — excessive or unwarranted reassurance and early promises seldom fool the patient.* Maximum long range benefit and satisfaction for the physician can happen only if and when the patient is treated as a totally integrated bio-psycho-social entity. When the patient feels a positive assurance that he is in safe hands, the sense of security he gets does something to his autonomic nervous system e.g. his blood pressure, heart action and gastro-intestinal tract.[6]

The pyschosomatic constellations engendered by fear and chronic anxiety fall into several discernible types. We have the "over-informed." He has read and heard much, true and false, about his illness and is prepared to question the physician's judgment. Underlying his intense interest is marked anxiety for his welfare. In the management of this patient, re-education is essential to remove the mass of misinformation he has gathered. Frank discussion and sympathetic understanding provide emotional reassurance and support for his anxious state and prepares him for therapy. Next comes the "fearful-silent" type; he is the tacit person and is slow to respond — the reticence of depression. He is overwhelmed by his illness and withdraws, fearful even to discuss his condition. In management, caution is of the essence, for this type is the depressed patient and is a potential suicide. Here encouragement may help him to speak out, thereby relieving to a certain degree, his mental load. Much reassurance is necessary. The "multisymptomatic" individual is excessively aware of his body which never ceases to cause him pain and discomfort. His illness is largely manifested by hysteria which is the means by which he expresses his emotional tension. Because his symptoms are anxiety relieving, the patient may subconsciously resist being treated. Care is necessary to rule out organicity. The "overtalkative" is overemotional and usually surprisingly uninformed; and is reluctant to listen to an explanation of his illness. The excessive talking is an attempt to conceal his anxiety. Here the emotional barrier must be penetrated to allow for reasonable discussion. Last but not least is the "aggressive-angry" type or the "hostile" one. He is hostile and the source of his hostility is usually in himself. He may be disturbed at his own body because of its weakness, or his hostility may be a defense against anxiety. It is hard to avoid the tendency to react with annoyance toward this type. However, here the patient is more likely to benefit by ventilating his angry feelings.[7]

An even more formidable test of the doctor's insight is the patient with hidden hostility that may show itself more subtly by interfering with logical thinking and emotional behavior. Repressed action of this type may be suspected whenever a patient of average intelligence finds it hard to understand or carry out the physician's clearly expressed directions and recommendations. Another problem is the overly affectionate patient, usually female, whose indiscriminate adoration of the doctor must be discernible from the reasonable respect and admiration forming the basis of good doctor-patient relationship.[8] In the severe form, such patients may make personal remarks to the therapist, be unduly curious about his personal life, or act coyly or provocatively. Here the doctor must be on the alert for such reaction and in a straight-forward and matter-of-fact manner, place the relationship on its proper footing.

Every device in one's psychotherapeutic armamentarium must be used in order to convince the patient of the emotional origin of his illness. However, at times reassurance and explanations may not be enough, for by the time the patient consults a physician, the emotional illness is usually complex and the conditioned reflexes are well ingrained. If the underlying factors are not clear and the case is taxing the physician, then referral to a psychoanalytically minded psychiatrist may be necessary.

Summary

To summarize, long before the term psychosomatic became an integral part of medicine, the

country doctor was usually cognizant of the role played by psychic influences; this was because of his closeness to the daily lives of his patients. With the development of scientific medicine, laboratory methods and mechanized medicine, the diseased organ came to fore and the patient seemed to be an object of relative unimportance. However, at present, psychologic awareness is gradually but with increasing intensity, employing the interrelationship of psyche and soma. It must be remembered that the total person is involved and that any rigid dualistic separation of "psyche" and "soma" is impossible.

Stresses vary in their intensity and individuals differ in their sensitivity and resistance to stressful situations.[9] Generally, the mere bringing to the open of all the emotionally charged associations, serve to "free" the symptoms, and the patient no longer clings to them; for besides understanding their significance, they cease to have an emotional hold and diminish or vanish. Reassurance is the most important aspect; and it is well to take heed that human relationship represents an important additior to the repertoire of fundamental medical concepts of patients with non-organic disorders.

Psychotherapy therefore consists of re-education, re-integration and re-orientation of the whole personality. Psychosomatic study is essential if we are effectively to connect the association of the physical complaint to the psychic and emotional behavior of the person.

An approach to the psychic constellations has been presented involving primarily the lessening of fear, anxiety and emotional tension, the use of psychopharmacotherapy, ideal doctor-patient rapport, and attempts to give the patient an insight as well as to keep him functioning. This is termed the *holistic approach.*

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ALPHA TOCOPHEROL IN GYNECOLOGICAL PRACTICE

A 12-year clinical evaluation.

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THIS IS A study of Vitamin E based entirely on clinical observations concerning its effects. The effect of this vitamin on female physiology is the concern of the major part of this paper. Vitamin E has long been labeled the fertility factor in human nutrition and is found widely in many foods, the richest source being wheat germ. The unit of Vitamin E used in this study has been in capsule form containing 200 milligrams with an assay of 70 international units per capsule. The product used routinely during a 12-year clinical evaluation has been Breon's Ecofrol (alpha-tocopherol).

Other investigators in the clinical evaluation of this vitamin have claimed the following effects for alpha-tocopherols:

1. Oxygen conservation in tissues.
2. Antithrombin effects.
3. Resolution of scar tissue.
4. Capillary dilitation.
5. Improved capillary permeability without loss of capillary integrity.
6. Aids in the resolution and prevention of thrombosis through fibrinolitic activities.
7. Increase of platelets.
8. Diuretic activity.
9. Improvement of epitheliation.
10. Increased muscle efficiency.
11. Retardation of vascular sclerosis.

From these aforementioned effects of alpha-tocopherol, it seems fair to conclude that the vitamin is primarily concerned with the circulatory system. The physiological effect of this vitamin results from the improvement of circulation in the organ affected or the disease process. A basic change of all disease processes is the impairment of the capillary and arteriolar bed of the tissue involved. Any preparation that tends to regenerate or restore arteriolar damage should materially help the organism to arrest or resolve its affliction. Vitamin E apparently acts in this way.

Since this paper covers a clinical observation period of over 12 years duration, the author is reporting observed effects rather than statistically enumerating many case records.

I wish to add to the above list of observed Vitamin E effects, the apparent regulatory effect of this vitamin on ovarian function. The tocopherols seem to affect the normal maturation of ovarian follicles, aid in the resorption of persistent follicles and follicular cysts and, in some way, augment corpus luteum function. By these mechanisms, a more physiological ovarian function results and directly a normal menstrual function.

First Observations

My first observations with this vitamin were in the climacteric. The use of estrogens or estrogen-androgen preparations during the menopause should usually be limited to controlling vasomotor instability. The use of estrogen or estrogen-androgen preparations for the control of vasomotor symptoms can be supplemented or replaced with alpha-tocopherol orally. The dosage of Vitamin E necessary varies from 200 to 600 milligrams daily (70 I.U. to 210 I.U.) The complete control of vasomotor symptoms will not occur immediately. Relief is obtained after about seven to 14 days of therapy and can then be maintained by the use of 200 milligrams daily. In addition to control of vasomotor symptoms, these menopausal patients note a better sense of well-being; hypertension, if present, is often reduced and associated arteriolar spasms in the extremities are relieved. The patient observes an increased muscle efficiency and less fatigue.

The vasomotor instability is not the only symptom of the menopause that brings the patient for treatment. Abnormal bleeding of the uterus is one of the prominent complaints. Some of these may have been produced by the indiscriminate use of estrogens. The patient with menorrhagia or metrorrhagia should be carefully evaluated. A general physical examination, including a pelvic and rectal examination should be done. A Papanicolaou smear should be taken routinely. The cases that show pelvic pathology indica-

ting surgery or radiation therapy should be handled in that manner. There are many cases, however, that show no palpable pathology or visable cervical pathology and the Papanicolaou and endometrial biopsies are negative. This patient is placed on Breon's Ecofrol with the following dosage: 600 milligrams (three capsules) is given for seven days and the dosage is then reduced to 200 milligrams daily. This is started at any time in the disturbed menstrual cycle. Control of the bleeding episodes can be expected within three to four weeks of therapy, but continuance of the therapy is necessary for an indefinite period or until the climacteric is proceeding in a more physiological manner. This is not a temporary preparation to give temporary relief. but a physiological preparation that helps maintain a more normal physiology and, therefore, the patient stays well by continuing the therapy. It has been a consistent clinical observation that patients in this category will control their dysfunctional bleeding in this manner.

Breon's Ecofrol in the manner just described was also used in patients who were found to have endometrial hyperplasia by diagnostic dilitation and curettage. In this group, there was no other palpable pelvic pathology and Papanicolaou biopsies were negative. I do not feel that these women are more prone to develop carcinoma of the endometrium, and this opinion is borne out by women observed over a more than 12 year period. Vitamin E therapy was started at the time of their first visit before the diagnostic dilitation and curettage was performed. When pathological diagnosis established the cause of bleeding as endometrial hyperplasia, the Ecofrol therapy was continued at a dose of 200 milligrams daily. The patients who continued this therapy faithfully for the next six to 12 months had no further abnormal uterine bleeding and many of them underwent a progressive oligomenorrhea. Many of them had subsequently an uneventful menopause with gradual cessation of menses. Other effects as noted previously were observed. The most consistent effect being a definitely increased feeling of well-being produced by Ecofrol therapy.

Fibromyomata

In the menopausal or pre-menopausal age group, a not infrequent finding is an enlarged uterus. This palpable enlargement is often symmetrical or may be asymmetrical resulting from small fibromyomata. The diagnosis of fibromyomata should be established. There may be no symptomatology from this condition, or there may be pelvic pain of varying severity. Dysmenorrhea may also be a complaint. I feel that surgery for fibromyomata should be limited to the cases that present either one or all of the following signs or symptoms:

1. Excessive or abnormal bleeding.
2. Increasing size of the tumor.
3. Pelvic pain referable to the tumor.
4. Positive Papanicolaou smear.

In the patients showing the above signs or symptoms in lesser degree, or in patients with fibromyomata not falling in the above categories, Vitamin E therapy should be tried. The following effects are usually demonstrable.

1. Decrease of pain.
2. Decrease in the tumor size.
3. Decreased menstrual flux.

Because of the effect of Vitamin E in the abnormal dysfunctional bleeding of the menopause, I began to use it in the younger group of gynecological patients with menstrual disorders. This category included women with either hypermenorrhea or oligomenorrhea. Of course, in this younger group, various other factors play a role in their menstrual disturbance and must be ruled out as contributory causes of menstrual upsets. However, there is an appreciably large group of women whose menstrual disturbances are not explained by physical examination of or palpable pathology in the pelvic viscera. They fall also into a category of dysfunctional bleeding and are considered to have a glandular imbalance. We often do diagnostic curettage on these women and find no apparent pathology in the endometrium. The curettage is but a temporary means of controlling a hypermenorrhea and is more often a treatment of the effect rather than the cause. On physical examination, these younger patients may show palpably enlarged ovaries diagnosed as cystic ovaries. The ovarian enlargements are usually not alarming enough to require a laparotomy or cul-de-sac visualization. The ovarian enlargements are usually due to persistent follicles or follicular cysts, but also may be caused by persistent corpora lutea. These ovaries are sometimes manipulated and resected by surgeons, particularly if accompanied by some pelvic pain. These surgical procedures are of little value since here again the effect is re-

moved rather than the cause. These patients respond well to Vitamin E therapy and, in order to standardize the dosage, they receive the same dosage as the climacteric patient, namely Ecofrol 600 milligrams daily for seven days and then a maintenance dose of 200 milligrams daily. Eighty per cent of this group revealed a return of normal menstrual function within 90 days of therapy, the remaining 20 per cent required hormone therapy in addition.

Other Uses

Breon's Ecofrol is also used in the treatment of cystic mastitis and other conditions of the female breast characterized by increased engorgement and tenderness. Simple premenstrual engorgement, causing pain in the breasts, is relieved by Vitamin E therapy in doses of 400 milligrams daily taken for three to four menstrual cycles. Women diagnosed as having cystic mastitis or fibrocystic disease of the breast by clinical evaluation alone, or by biopsy where the diagnosis is in question, are benefited by Vitamin E therapy. It is surprising but true that in cystic mastitis or fibrocystic disease of the breast, Vitamin E therapy will apparently cure or so greatly regress the condition that cure is apparent. In this condition, Vitamin E was given in doses of 600 milligrams daily until improvement in the cystic condition was noted clinically. The period necessary to obtain clinical improvement with this method varied from three to six months. The dose was then reduced to 200 milligrams daily as a maintenance dosage.

Because of the antithrombin effects, fibrinolytic activity, and the improvement of peripheral circulation claimed for Vitamin E therapy, I have used this therapy in the treatment of postpartum and postoperative thrombophlebitis and phlebothrombosis. This therapy was used exclusively in the treatment of postpartum and postoperative thrombophlebitis either acute or subacute. Acute cases are defined as patients exhibiting local swelling, erythema, tenderness and constitutional reactions of fever, elevated leucocyte count and tachycardia. The sub-acute case shows these symptoms to lesser degree with no apparent constitutional general reaction. Breon's Ecofrol was started in large doses orally and, in some cases, augmented by Breon's parenteral tocopherol. The oral dose consisted of four capsules (800 milligrams) four times daily, equivalent to 1120 I.U. This is continued until clinical subsidence of the involved veins is demonstrable. This usually takes place in 24 to 48 hours. The dose may then be reduced to 400 milligrams three times a day until the thrombosis has subsided. A definite improvement in thrombophlebitis is usually noted within 12 hours. Pain may be relieved in as little time as 24 hours. Early ambulation is advisable and should be done within 48 hours. No cases of embolism occurred with early ambulation. Phlebothrombosis responds just as dramatically to the above routine.

In the antepartum patient, with marked varicosities of the lower extremities, the discomfort and pain often found with this condition can be relieved with alpha-tocopherol. Any associated phlebothrombosis is often cured. Varicose ulcers or associated skin pigment changes are restored to normal with continued tocopherol therapy.

Patients considered as embolic risks before or after surgery can be prophylactically treated with Vitamin E prior to surgery and the risk will be minimized. *It is well to note here that a tocopherol-like compound has been found in the accelerator globulin of the blood plasma. The antithrombin factor of the blood may be alpha-tocopherol.*

Breon's Ecofrol is a safe and effective preparation in the treatment of these intravascular changes. It is certainly more safe and equally effective as anticoagulant therapy, e.g. Dicumerol and Heparin. *There are no hemorrhagic complications with the use of alpha-tocopherol.*

Effective In Lymphedema

The remarkable effect of alpha-tocopherols on the human circulatory system does not appear to be limited to the arteriovenous system. I have two cases on record of lymphedema of one lower extremity occurring as a complication of radiation and radium therapy for carcinoma of the cervix (invasive squamous cell carcinoma.) These cases showed marked improvement, arrest and subsiding of the lymphedema with Vitamin E therapy in doses of 1,200 milligrams of Breon's Ecofrol daily. One of these patients received parenteral Breon's alpha-tocopherol intramuscularly. The dose of intramuscular alpha-tocopherol was 400 milligrams per week for one month.

One of these patients left the community before final evaluation could be obtained. Contact with this patient was subsequently lost. How-

ever, the second patient is still under observation and is able to control the lymphedema of the left lower extremity with Vitamin E therapy.

From the foregoing discussion, it is my opinion that Breon's Ecofrol, or Vitamin E therapy, has a definite place in the treatment of these aforementioned conditions. I would also like to note and reiterate that almost all of the female patients I have placed on Vitamin E therapy have noticed an increased feeling of well-being. Most all have noted a greater muscle efficiency with less fatigue. The older geriatric women in my practice have noted better peripheral circulation. Mild edematous conditions of the lower extremities, secondary to vascular disturbances, have been relieved. Vascular spasms with resulting pain are relieved while on Vitamin E therapy. Remarkably, women who were seen as gynecological patients, who had previous history of cerebral accidents, suffered no further cerebral episodes while on Vitamin E therapy. Many women continued the daily use of Ecofrol after the gynecological condition was relieved because they "feel better" while taking it.

It must be emphasized, however, that the physiological resopnse to Vitamin E therapy, dramatic as it may be, is not always rapidly obtained. The results are apparently cumulative in that therapy for a few weeks to a few months may be necessary for complete beneficial response.

I have never noted any toxic reactions to or undesirable side effects from Ecofrol therapy. Occasionally, the patient may complain of mild vertigo wihle taking Vitamin E.

Summary

After a 12-year study of the use of alpha-tocopherol, it is my opinion that this preparation has a physiological effect on the function of the ovary and pelvic circulation. It is of great and often curative benefit in the following conditions:

1. Vasomotor instability of the menopause.
2. Relief of dysfunctional bleeding of the uterus.
3. Amelioration and cure of simple cystic conditions of the ovaries.
4. Physiological effects on fibromyomata of the uterus resulting in less pain and tenderness, restoration of normal menses and diminution in size.
5. Apparent cure of chronic cystic mastitis.
6. Relief of premenstrual painful breast engorgement.
7. Cure of thrombophlebitis and phlebothrombosis.
8. Control of lymphedema.
9. Increased feeling of well-being while on therapy.

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A NEW TREATMENT FOR CHRONIC AND RECURRING (STUBBORN) TRICHOMONAS VAGINALIS CASES.*

by

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THERE IS apparently no condition in medicine in which physicians are seeing more and more cases which no longer respond to the usual treatment than Trichomonas Vaginalis. This has also been observed in this writer's practice and in the Obstetrical and Gynecological Research Institute. Trichomonas Vaginalis might be labeled the headache to those who treat women for vaginal conditions.

This investigator has been trying to find some method whereby these chronic and recurring Trichomonas vaginalis cases could be eliminated, thereby eliminating those coming back and forth to the same or different physicians seeking relief from chronic and recurring Trichomonas vaginalis with its itching and leucorrhea.

This investigator has tried almost all medications advocated in the medical literature, but soon found these medications were no longer as efficient as they were when they were first started. Many were no better than the many medications already in the literature.

NEW LOW pH (1.8-2.2) VAGINAL POWDER AND TABLET

Eleven years ago this investigator started back to his work on his original research on acidity (pH) of the vagina, since it is well known and well proved that no vaginal pathogens can live below a pH of 2.90. It has also been well shown and proved that chemicals which were at first very toxic to Trichomonas Vaginalis were not the answer to getting rid of these chronic and recurring Trichomonas Vaginalis cases, even when applied to the vagina in all or any form. It has been discovered time after time that Trichomonas Vaginalis becomes resistant to anti-Trichomonal agents.

It has been shown by the very accurate electronic pH recorder, by vaginal cultures, and vaginal pH studies that Trichomonas Vaginalis will not grow in a vagina with a pH below pH

Fig. 1. Shows the constant vaginal leucorrhea of Trichomonas vaginalis with its associated itching and burning. This is the leucorrhea that is usually found in these chronic and recurring (stubborn) cases.

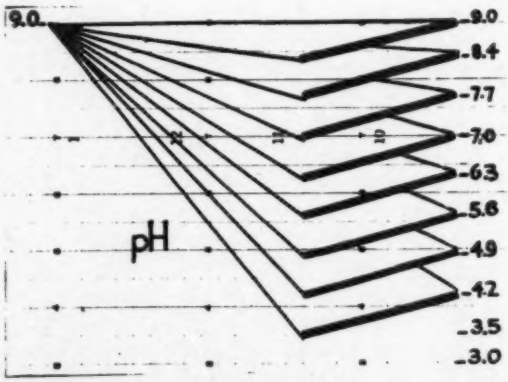

Fig. 2. Shows the new classifications of the vagina as discovered in the Obstetrical and Gynecological Research Institute, Houston, Texas. Schroeder classified the vagina into three groups, namely, I, II, and II based on the absent or presence of the Doderlein bacilli. This author classifies the vagina into 8 groups, shown as planes. The highest pH recorded was 9.0.

*From the Obstetrical and Gynecological Research Institute and the private practice of this author.

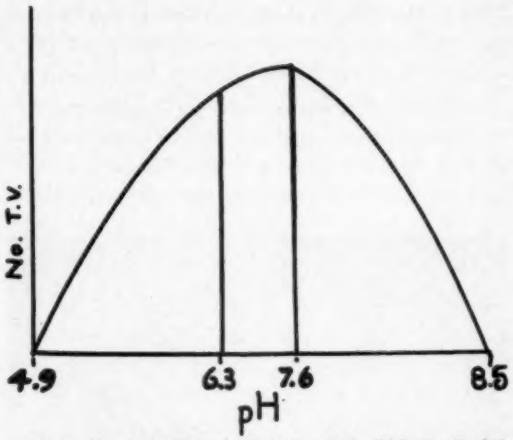

Fig. 3. Shows the lowest pH, 4.9 and the highest pH, 8.5 found in vaginas infected with Trichomonas vaginalis. Approximately 80 per cent of the vaginas with Trichomonas vaginalis gave a recording of pH 5.6. In the acute vaginitis cases the pH varied from pH 6.3 to 7.6 in most cases.

4.9 and in a culture below pH 5.0. By the use of the very accurate electronic pH recorder it has been found that Trichomonas Vaginalis will survive in vaginal secretion with a pH of 4.9 to 8.5. (Fig. 1, 2 and 3)

This writer has been trying to find ways whereby the vagina could be lowered to a new low pH *without burning the vagina and/or perineum*. At first, it was observed that the lowering of the vagina below pH 3.90 produced severe burning of the vagina and/or perineum, with white membrane production. Finally, a special method was found whereby the vaginal pH could be lowered to 1.0 to 1.8 without burning the vagina.

At these very low pHs no Trichomonas Vaginalis or vaginal pathogens can survive. Only the Doderlein bacilli can live and multiply at such low pHs. A new method was also devised whereby this new low pH could be maintained for up to 64 days. This was accomplished by adding newly discovered vaginal adhesives which cause this medication to adhere to the vaginal walls for days, weeks, and even months, thereby eliminating the necessity of vaginal packs and perineal pads.

THE NEW LOW pH (1.8 to 2.2) POWDER AND TABLET METHOD*

In those chronic and recurring cases the patient is fitted *very accurately* with a cupped contraceptive diaphragm. (Fig. 4) After the diaphragm is well fitted and in its position within the vaginal canal, the proximal end of the diaphragm is pulled down from under the symphysis pubis and held down against the posterior vaginal wall. With one finger holding the proximal lip of the diaphragm down, two to

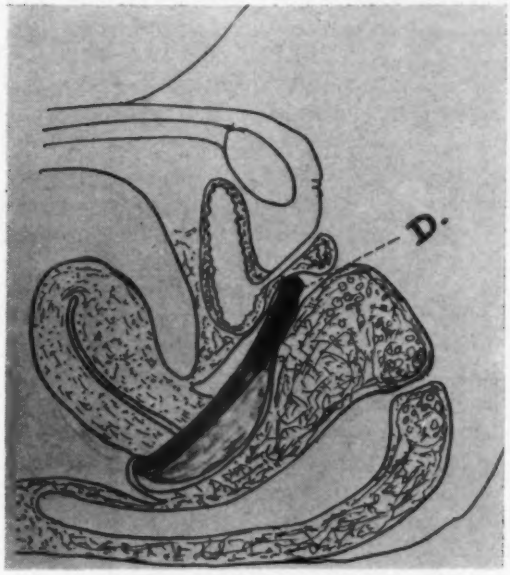

Fig. 4. Shows the very accurately fitted diaphragm in place. The letter D represents the diaphragm. It is important that a well fitted diaphragm be used. The diaphragm may be slightly too small but must not be too large.

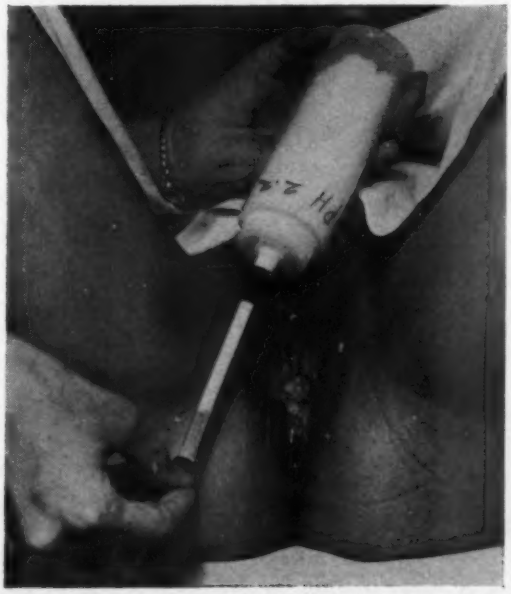

Fig. 5. Shows the contraceptive applicator being filled before the New Low pH powder is instilled into the diaphragm and into the vagina. The powder is so finely pulverized that it almost pours or can be instilled like a jelly. Two to four or six applicators full is instilled into the diaphragm and under the diaphragm in the office by the physician and the patient carries out this procedure twice weekly.

*Trimagill is the trade name for the new low pH powder and tablets.

six contraceptive applicator® fulls of the new low pH powder is placed in the diaphragm plus two to four new low pH tablets. Fig. 5 and 6)

The patient is taught how to get her fingers under the proximal lip of the diaphragm and shove this part of the diaphragm down against the posterior vaginal wall, so that she may insert at home, two to four new low pH tablets in the diaphragm weekly. (Fig. 7 and 8) The tablets and powder are best if inserted in the morning so that by night they have become soft.

She also places 2 doses of the new low pH powder and 1 tablet *under the diaphragm* weekly when she fills the diaphragm cup.

She is also taught how to remove the diaphragm once or twice monthly, or whenever she wishes, or if it ever becomes uncomfortable. (Fig. 8) Most patients wear the diaphragm from one to the next menstrual period. If the diaphragm becomes uncomfortable, it indicates that the diaphragm is too large.

There has been no harm wearing the diaphragm even through each menstrual period and over a period of 12 months if the diaphragm is correctly fitted. If a diaphragm which is too large is inserted, a pressure groove in the vaginal wall will form and granulation tissue will form which will, in some cases, have to be coagulated.

The patient may remove the diaphragm anytime she wishes, clean it, reinsert it and refill it with the new low pH powder and 2 to 6 new low pH tablets. Coitus is not interfered

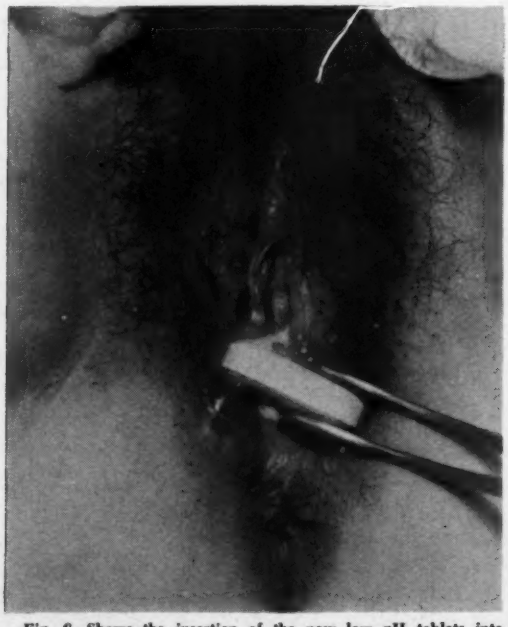

Fig. 6. Shows the insertion of the new low pH tablets into the cup and under the diaphragm which has been fitted in the vaginal canal. The physician inserts 2 to 4 or even 5 of the new low pH tablets into diaphragm and 1 to 2 under the diaphragm. The patient inserts 2 to 4 of the tablets in the diaphragm plus 1 to 2 under the diaphragm.

Both powder and tablets are inserted and instilled into the cup and under the diaphragm as it sits in the vaginal canal.

It has been found best to instill the powder first and then insert the tablets.

Fig. 7. Shows a model of the vagina with a diaphragm in it filled with the new low pH powder and tablets. There is no harm that can be produced from this new low pH powder and tablets even at its low pH of 1.8 to 2.2.

Fig. 8. Shows a diaphragm removed from the vagina after being in the vagina continually for 3 months. There was no harm produced from this constant presence of this new low pH powder and tablets (in paste form here). This patient used too many tablets and instilled the powder too often.

This procedure has been used for over two years without encountering any harm therefrom. The vaginal walls become more normal in color if they were abnormal in color before this treatment was started.

with and so the diaphragm is worn during coitus.

ACTION OF THE NEW LOW pH METHOD

The anterior vaginal wall and all of the cervical walls and up in the cervical canal for a short distance will become very acid, pH 1.8 to 2.0, immediately (within 3 minutes) after the new low pH medication is applied. The pH remains with pH ranges of 2.0 to 3.5 for 4 to 7 days. In some cases the pH 3.5 has remained for 64 days with but one filling of the diaphragm with the new low pH powder and tablets. At these low pHs Trichomonas vaginalis and all vaginal pathogens are killed almost immediately. The Doderlein bacilli lives and multiplies at these low pHs.

As mentioned before, incorporated within the new low pH tablet and powder are *new vaginal adhesives* which cause the medication to adhere to the anterior vaginal wall, all cervical walls and especially cover over the anterior vaginal wall and to the cervical external os. This adhesive causes the diaphragm to adhere firmly to the lateral and anterior vaginal walls.

In those cases where the Trichomonads remain up in the cervical canal during the vaginal treatment period, this medication, at such low pH, with the spreading agent, moves up in the cervical canal for certain distances, killing those Trichomonads which are in the proximal one-fourth of the cervical canal. This author has seen a Trichomonad with the cervical gland removed as a biopsy. It has also been shown many times that cervical secretion upset and causes an abnormal pH, or pHs, which are very favorable for Trichomonas Vaginalis growth.

In those patients whose recurring Trichomonas vaginalis is from the cervical canal, this treatment usually will destroy the Trichomonads within the cervical canal after the contraceptive has been worn for at least 3 months. In some cases the continuous diaphragm will have to be worn for 4 to 12 months.

In those patients in whom the husband is infected with Trichomonas vaginalis and reinfects his wife at coitus, enough of this medication which spills over the diaphragm to produce a vaginal pH of 3.0 to 3.5, which kills any Trichomonads which are ejaculated, even if the wife forgets to insert the one tablet and powder under the diaphragm weekly. This prevents a re-infection.

In those patients whose reinfection is from the bladder, Skene's ducts, or elsewhere, Trichomonads are also destroyed when they reach the perineum or the vaginal canal. The spreading agent in this new preparation causes this new low pH powder to extend for certain distances up into these glands, destroying Trichomonas Vaginalis. In this manner the vaginal canal remains free of Trichomonas Vaginalis and free of itching, burning and leucorrhea.

CLINICAL RESULTS

In 30 out of 40 old chronic and persistant Trichomonas vaginalis cases, the patient remained free of Trichomonas vaginalis after she had worn the continuous diaphragm for 3 months. The recurring cases of itching, burning and leucorrhea were instructed to wear the continuous diaphragm for 1 to 6 or more months. This method eliminates the itching, burning and leucorrhea immediately as long as it is worn. This method can do no harm, but can give these women relief from their constant itching, burning and leucorrhea. Those who are really bothered with Trichomonas vaginalis will be eager to learn how to use this method because of the relief obtained.

THE TABLET METHOD

Those who have not, can not, or will not wear the continuous diaphragm filled with the new low pH powder and/or tablets are instructed to insert deep in the vagina 2 to 8 applicator fulls of the new low pH powder and/or 1 to 2 new low pH tablets twice weekly. This medication is inserted *in the morning* so that the preparation will become *a soft paste* within 2 to 3 hours and before night, so that if coitus takes place, there will be no harm to the penis and there will be an adhering very low pH paste covering the cervical canal (external os) and the vaginal walls. This paste will not adhere to the penis and is not messy. This procedure keeps the vaginal pH near 3.0 to 3.5.

By inserting this medication twice weekly, the vagina is kept free of annoying Trichomonas vaginalis and the patient will be free of the annoying itching and/or burning.

*A new vaginal instillator of this new low pH powder will be placed on the market soon to replace the contraceptive applicators which too often fill up so tight that the powder packs in the tube. This new instillator does not become blocked with the powder.

CONCLUSIONS AND SUMMARY

New methods are presented whereby the vaginal pH can be kept at a very low pH for days, weeks and months and years, thereby eliminating all Trichomonads in the vagina, as well as preventing recurrences of Trichomonas vaginalis, Hemophilus vaginalis, Candida albicans and other bacterial infections of the vagina. At these pHs only the Doderlein bacilli can live and multiply. The diaphragm is worn during coitus, since the diaphragm does not interfer with coitus. The powder and tablets are very powerful contraceptive and should not be used by those desiring pregnancy quickly. There is no harm from these medications at even such a low pH. All medications in this preparation are nontoxic.

The patient is fitted with a well fitting vaginal diaphragm, filled with new low pH powder and/or tablets *in the office* and the patient inserts powder and/or tablets twice weekly at home, thereafter for at least 3 months, or she inserts 1 to 2 new low pH tablets and/or powder twice weekly, early in the morning.

By the use of this powder, the vagina is kept at a very low pH of 2.0 to 3.0, continuously, a pH which is so low that only the normal Doderlein bacilli can survive. The vaginal canal remains normal constantly in all its physiological factors.

Whenever Trichomonads are ejaculated into the vagina or get into the vagina from other source or sources, they are killed immediately.

By the use of this method the chronic and recurring Trichomonas infections, as well as the signs and symptoms, are eliminated.

The adhesives prevent any leakage of the medication from the vagina.

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MEDICAL PROBLEMS OF MODERN WARFARE AND CIVIL DISASTER

12th Naval District Symposium, June 1958

INTRODUCTION TO THE PROBLEMS

by
Rear Admiral B. W. Hogan, MC, USN
Surgeon General of the Navy

Editor's Note — Arizona Medicine *has presented and will continue to present original papers from this symposium. The present discussion deals with specific military plans, and is published in the hope it will stimulate adequate planning for the civilian population.*

ADMIRAL RUSSELL, Admiral Greaves, fellow officers and distinguished participants and guests . . . On behalf of the surgeon general of the navy, Rear Adm. Bartholomew W. Hogan, I want to welcome you to this symposium which has convened to discuss the medical problems of modern warfare and civil disaster.

For many generations, the medical profession and the allied medical sciences have been involved in the seemingly endless task of dealing with man's adaptation to the environment in which he lives. In the past, the environment has consisted in the main of natural forces such as climate, food, water, shelter, protective clothing, reproduction of the species and a liberal admixture of worship and fear. However, with the advent of industrialization of so many parts of the world, new forces in the production of traumatic injury to man, including the onslaughts of biological effects, have been encountered.

Medical history accents the remarkable progress that has been made since the turn of the 20th century in the control of communicable diseases which followed in the wake of the great discoveries of Louis Pasteur, Robert Koch and so many other notables.

Hardly had the surface of these problems been scratched than the astounding discoveries of Pierre and Madame Curie and Professor Roentgen pointed to a new force which was to have phenomenal biological and physiological implications. Radiation energy, whether from man-made machines or from nuclear energy, was destined to have a profound effect, not only on the lives of men, but on all mankind and his environment as well.

The initial interest in the new force was directed more to its development in the diagnosis and treatment of diseases. However, the discovery by Rutherford, in 1919, that the structure of matter could be changed by bombarding the elemental atomic nucleus with alpha particles from a radium source gave great impetus to the problem we are facing today in this atomic and thermonuclear age.

The almost concurrent development by Cockroft and Warton in England, and Lawrence in the United States, of devices for producing relatively large quantities of high energy particles for the transmutationof matter was followed on Dec. 2, 1942 by Fermi and his co-workers who produced the first self-sustained nuclear chain reaction by employing a highly fissionable material. Just a few years later, this nuclear reactor became a weapon of war, and the terrific energies produced were added to man's environment. We were truly projected, if not catapulted into the Atomic Age. With the manufacture of this weapon in sufficient quantities to produce a devastating effect in man's environment, the medical profession and allied science specialists of the world were charged with the responsibility of developing accurate knowledge of the biological and kinetic effects of this energy, and of assisting in plans, logistics and training programs for the care of staggering numbers of human casualties which could be expected in the event of an atomic or thermonuclear attack. Thus there began a scientific team-effort which is unparalleled in history.

Concerted Action

Not only was the military interested in this colossal problem and challenge, but the term, "civil defense," became a by-word, as non-combatants are no longer immune to the devastating effects of these nuclear weapons.

The collective efforts of highly qualified and carefully selected scientists in the field of nuclear research have been channeled through top-level

committees of the nation for evaluation and coordination of the total effort. Of these, it might be well to mention at this time: (1) The Division of Biology and Medicine of the United States Atomic Energy Commission. (2) The Committee on Genetic and Somatic Effects of the National Academy of Sciences of the National Research Council. (3) The National Committee on Radiation Protection, centered at the National Bureau of Standards, Washington, D. C.

These are only some of the highly important areas of concerted action in this field which is so important to individual and national survival.

As might be expected, the knowledge that is accumulating on the overall problems of radiation (through the efforts of individual scientists, laboratories, agencies and committees) is becoming very extensive indeed. Consequently, it is the main purpose of this symposium to present for your consideration the most pertinent and timely aspects of progress to date. I am sure that the information about to be passed on to you has been weighed quite carefully in terms of its potential value to the role you shall be called upon to play in the future of our country. To be effective, the usable knowledge of the effects of special or non-conventional weapons upon the human race, cannot be kept locked in laboratories, agencies or committees. but, must be given the widest possible dissemination commensurate with the national welfare and security.

Recent developments in ABC or thermonuclear, biological and chemical warfare, the use of nuclear power, and radioactive isotopes have accentuated the problems in medical defense and radiation protection, and in certain instances have created new ones. The Special Weapons Defense Division of the Bureau of Medicine and Surgery has the responsibility for recommending policy and for furnishing guidance concerning these problems to the surgeon general and thus to the medical department at large.

It is my desire to utilize the opportunity afforded by this symposium to comment upon recent thinking and concepts in ABC warfare defense and radiation protection. In the presentations that follow mine, I am sure you will obtain a first hand account of the medical problems as they exist in the shore establishments and fleets, and it is felt that the benefits will be mutual for our military and civilian groups alike.

One of the most difficult aspects of planning for ABC warfare medical defense and radiation protection is a delineation of responsibilities of the medical department. This, of necessity, requires a thorough knowledge of the medical aspects of the problems in relation to the over-all problems.

First, I shall discuss briefly ABC warfare medical defense and then review some of the newer facets of radiation protection. Medical defense against ABC weapons will be discussed in its relations to passive defense, since this is essentially a wartime problem for which we must prepare prior to hostilties. Radiation protection is with us at all times and demands an ever-increasing interest, especially as the navy, and civilian industry increase the use of nuclear power.

ABC Warfare Defense

ABC warfare defense cannot be discussed without looking into the broader field of passive defense of which it is a part. In this regard, *OPNAV INSTRUCTION* 3440.4 (formerly *OPNAV INSTRUCTION* 3300.2 of Sept. 30, 1952) lays down the broad responsibilities in ABC warfare defense of the various bureaus of the navy department as well as those of the subordinate commands. It is important to note that passive defense includes defense against all methods of warfare, not merely against atomic, biological, and chemical. The responsibility areas of the Bureau of Medicine and Surgery, as outlined in *OPNAV INSTRUCTION* 3440.3, are as follows:

1. Develop procedures, and develop, procure, and distribute equipment and materials for the treatment of mass casualties resulting from atomic biological and chemical warfare attacks.

2. Advise agencies responsible for the provision of protection, decontamination, and detection devices as to medical aspects involved in their operation or development.

3. Develop techniques, and develop, procure, and distribute devices for the rapid identification of biological warfare agents.

4. Investigate and develop means of increasing the resistance of individuals to the effects of atomic, biological, and chemical warfare agents.

5. Establish tolerance and regulations for radiation and provide information on physiological effects of exceeding such tolerances by varying amounts.

6. Train medical and paramedical personnel, as required, to develop adequate atomic, biological, and chemical warfare defense concepts and realistic techniques.

7. Indoctrination of all hands in the elements of "buddy aid," self aid and first aid.

OPNAV INSTRUCTION 3440.6 of May 26, 1955, the *United States Navy Passive Defense Manual,* outlines defense planning responsibilities, organization, general concepts of passive defense operations, relation to civil defense, the make-up and function of standard passive defense teams, and a compilation of laws, executive orders, and regulations pertaining to domestic emergencies, passive defense, civil defense, and related problems.

The above instructions indicate the areas of management, technical, and operational responsibilities which must be considered in the preparation and implementation of local passive defense bills. To assist in preparation, and interpretation of the instructions by the Special Weapons Defense Division of the Bureau of Medicine and Surgery, progress has been made with regard to a delineation of the medical department's technical and operational responsibilities within the over-all passive defense organization. The primary responsibilities of the medical department which are involved in this delineation are as follows:

1. Advisory, 2. Prophylaxis and therapy (prophylaxis mainly applicable to biological warfare defense), 3. Instruction in self aid and first aid – which has been standardized on a navy-wide basis and will be referred to later. (Mainly applicable to atomic warfare and chemical warfare), 4. Mass casualty handling and evacuation, 5. Epidemiological countermeasures in biological warfare, including epidemic intelligence in recognition of a biological warfare attack, 6. Training of medical and paramedical personnel. 7. Indoctrination of all personnel in the medical aspects of ABC warfare, 8. Decontamination of actual casualties *(not of other personnel),* 9. Detection of ABC contamination in certification of food and water for consumption *(not in the general environment),* 10. Identification of biological warfare agents, and 11. Recording and accountability for personnel exposed to ionizing radiation.

There is little question regarding delineation of responsibility insofar as the first seven items are concerned; most of the confusion that has arisen, and still exists occasionally, arises from a misunderstanding of items 8 through 11.

Responsibilities

The responsibilities of the medical department in various situations will therefore be considered; first, the duties of the medical department in a nonmedical command, such as ship or station. The pre-attack duties logically come first and among these, in addition to advisory functions, are planning, indoctrination of all hands in the medical aspects of atomic, biological, and chemical warfare defense, prophylactic procedures in prevention of biological warfare casualties, and thorough teaching of first aid, self aid and "buddy aid" to all personnel. These pre-attack duties are closely tied together. Planning means, in part, preparing a medical annex to the passive defense bill of the ship or station. The medical officer needs adequate training if he is to fulfill his duties in ABC warfare defense. The courses now given in this subject at the Naval Schools Command, Treasure Island, Calif., and other naval and and army facilities are stressing planning concepts that will be helpful at all operational levels. They will be enumerated later.

Among the clearly delineated post-attack duties of the medical department are: Triage, (or sorting of casualties); treatment of casualties, including post-exposure prophylactic procedures; decontamination of casualties, (but not to decontaminate non-casualties); advisory capacity function concerning decontamination of non-casualties and water and food supply control; the evaluation of potential casualties, such as asymptomatic radiation exposures, biological warfare exposures, if known, and personnel exposed to war gases having a latent period.

Post-attack duties include several functions which need clarification. The decontamination of personnel, with the exception of actual casualties, is *not* the responsibility of the medical department. Sample bills that have come to our attention have shown that there is a widespread misconception that decontamination, in general, is a primary duty of the medical department.

One bill that was seen had the entire medical department leaving the sick bay and battle dressing stations to go to the decontamination stations when general quarters sounded. Actually, the only decontamination that is the responsibility of the medical department is the decontamination of casualties, and this for the obvious reason that a severly wounded man must come to the medical department for treatment as soon as possible. Decontamination, in general, of personnel as well as of material, is the responsibility of the damage control department on shipboard, and the responsibility of similar nonmedical personnel ashore. The rationale for not assigning this responsibility to the medical department is that the medical department, at the time of enemy attack, will be overloaded with purely medical duties and must not be saddled with additional responsibilities.

Another duty about which confusion appears to exist in regard to responsibility is in the detection and identification of biological warfare agents. Consistent with their responsibilities, the development of physical devices for rapid detcetion of biological warfare agents is the responsibility of the Bureau of Ships afloat, and the Bureau of Yards and Docks ashore. These devices are intended to reveal the presence of viable, airborne, pathogenic agents, and their use is regarded as a warning procedure. Their continued development and operation will be the responsibility of nonmedical personnel, as are other types of warning devices. Biological methods of detection and identification are the responsibility of the medical department. It is planned, however, that the collection of nonclinical samples for identification shall be accomplished by nonmedical personnel. Sampling devices for collecting pathogenic organisms and agents from the air, water or surfaces for identification by bacteriological, serological and other technics are quite far along. These devices, suffice it to say, are readily adaptable also for training of medical department personnel in this area.

Since the strictly biological identification procedures are a clear-cut responsibility of medical department personnel, the operation of sampling devices, both present and future should be at least under the *advisory supervision*, but not necessarily control, of the medical department.

Detection of ABC contamination of food and water, and identification of the BW and CW agents therein, are medical department responsibilities in which sampling may of necessity have to be done by nonmedical personnel under general medical supervision, because of the press of other duties. Identification of the BW agents, because of the techniques involved, can only be done by medical personnel, and the final certification of the safety of the food and water can only be made by the medical department. Treatment of water and food to make them safe for consumption is not a medical department responsibility, but close collaboration with medical personnel will be necessary in order to obtain medical department certification.

In regard to the responsibilities of the medical department in strictly medical commands, the duties are similar to those listed above, but with the added responsibility for the entire passive defense operations of the command. Hence, I believe that it cannot be too strongly emphasized that our medical and paramedical counterparts in the civilian passive defense organizations of the United States should make it quite clear to non-medical officials of these organizations that more suitable arrangements and training be developed to require that non-medical organized groups (e.g. police forces, school teachers, firemen, fraternal groups, air wardens, etc.) assume a major share of these responsibilities – for the sake of enabling medical personnel to have more freedom to take care of mass casualty situations.

Radiation Protection

The National Academy of Sciences and the National Research Council in June 1956 published a report on the findings and recommendations of several committees established to carry on a continuing study of the biological effects of nuclear radiation. One of the committees thus established deals with the effects of radiation on genetics.

A summary of this report states that any radiation dose, however small, can induce some mutations, and practically all radiation-induced mutation which has an effect large enough to be detected is considered harmful. Futher, we have a sizeable natural radiation background, probably 3-5 r in a lifetime.

However, additional sources of radiation ex-

posure encountered in radiology, radioisotope, diagnosis and therapy, special weapons testing, and the increasing use of nuclear power, and industrial and reseach applications of radioisotopes and nuclear science must make physicians everywhere aware of the increased dangers.

Based on these findings, the committee has reported that the general public of the United States should be protected, by whatever controls may prove necessary, from receiving a total reproductive lifetime dose (conception to age 30) of more than 10 roentgens of man-made radiation to the reproductive cells. Of this *reasonable* (not *harmless,* mind you, but *reasonable*) quota of 10 roentgens over and beyond the inevitable background of radiation from natural causes, we are now using on the average some 3 to 4 roentgens per person for medical x-rays. This is roughly the same as the unavoidable dose received from background radiation.

Thus far, only minor medical problems have been encountered in the use of nuclear power for submarines, due largely to the intensive specialized training and constant vigilance of the medical officers assigned to that program. As the U. S. naval nuclear propulsion program is extended, we should except there will be many medical problems to solve, especially if aircraft, surface ships, and the various types of guided missiles become so powered.

The advent of the atomic and thermonuclear-type weapons has necessitated many changes in the concept of modern warfare. If the medical department is to assume its traditional role in the next conflict, we must prepare *now* to render service in the face of weapons of far greater destructive power than was exhibited by the bombs which fell on Hiroshima and Nagasaki. Very little imagination is needed to transpose such a scene to any United States military or naval base.

The attack will not come on a predetermined D-day – rather, it will be at the enemy's convenience. There will be no time to mobilize or formulate plans during the initial attack and, since the targets of these weapons are expected to sustain large numbers of casualties, the role of the medical department will be more important than ever. Germany's experience during World War II emphasized the fact that medical services must play a primary role in the initial phase of any recovery plan, for morale purposes if for no other reason.

It will never be economically feasible to furnish each medical activity with medical complement capable of providing adequate medical care to that activity in the event of nuclear weapons attack. Even if it were feasible to provide such service, there is a very good chance that the medical personnel would be rendered ineffective by the attack. It is assumed, therefore, that should the enemy use thermonuclear weapons, medical care of casualties must be rendered by sources outside the target area.

Example of Hiroshima

Let us view the situation that existed at Hiroshima. Of more than 200 doctors at Hiroshima before the attack, over 90 per cent were casualties and only about 30 physicians were able to perform their normal duties as late as a month after the raid. Out of over 1,700 nurses, more than 1,600 were killed or injured. Many stocks of supplies were destroyed, and only three out of a total of 45 hospitals were usable. With such elimination of facilities and personnel, the lack of care and rescue activities at the time of the disaster is understandable.

This, then, is an example of what could occur. By knowing what we can do and how to do it in an atomic disaster, we – even as individuals – can do our part in minimizing the terrible effects. On a personal basis, we should know what to do to protect ourselves and our immediate family or group. Pre-attack preparations, supplies and shelter should be considered. As members of the medical department, we need the specialized type of knowledge to fulfill our responsibilities as physicians, dentists and nurses. Part of our job will be to prepare ourselves to care for the sick and injured under the most trying circumstances. We have all at one time or another done the most we could for the greatest number of sick or injured. However, with mass casualties this philosophy may break down, and we will be forced to exercise selective judgment as to what to do, when to do it, and to whom it may apply. Each will be guided by his own conscience, training and experience.

One of the biggest jobs for the military medical officers will be that of training – not only our own medical department personnel, but all

hands — in the elements of medical care with the greatest emphasis on self aid and first aid. Many responsibilities we will be forced to delegate to non-medical personnel! *They* will do the mass of the work with the representative medical officers acting as roving leaders.

Recognizing the importance of ABC defense training programs, the Bureau of Medicine and Surgery in 1948 directed the Naval Medical School of the National Naval Medical Center, Bethesda, Md. to prepare a five-day course in the medical aspects of special weapons. This course was enthusiastically received and has been repeated from one to four times each year. In 1953 the course was extended to two weeks. Approximately 3,000 army, navy and air force officers, both reserve and regular, have completed this special training. The present course is an intensive review of the medical problems associated with nuclear, biological and chemical warfare — it includes an introduction to nuclear physics, weapons systems, the problems of space medicine, the management of mass casualties, civil defense and military stress patterns. The March 1958 presentation re-emphasized the employment and capabilities of strictly conventional weapons.

For several years, medical officers have participated in the Line Atomic, Biological and Chemical Defense Course at Treasure Island, San Francisco. In January of this year, a four weeks' course in ABC warfare defense was organized for medical officers and will be given twice each year. Special weapons orientation courses are also available at Norfolk, Va.; San Diego, Calif., and Sandia, N. M. A Weapons Effects Course is also available at the Sandia base. A five-day symposium on atomic weapons for 200 medical department officers was given in 1957 and repeated in 1958 at Sandia. This was sponsored by the air force — under army supervision.

Fort Detrick, Md., is the center for biological warfare training and medical department officers are assigned to the research program. In chemical warfare training programs, medical service corps officers are on the teaching staff at Fort McClelland, Philadelphia, and Treasure Island.

The Bureau of Medicine and Surgery has regularly filled the available billets in the one week Walter Reed Army Medical Center and Brooks Army Medical Center courses in the "Management of Mass Casualties." A total of 34 senior naval medical officers have completed these army courses this year.

Admiral Greaves, district medical officer of the 12th naval district, has sponsored previous seminars on special weapons for all medical department officers in the San Francisco area, such as is being held here today.

Additional Training

Atomic propulsion has created a priority requirement for nuclear trained submarine medical officers. These officers receive basic submarine medical training over a period of six months. They are then ordered to a submarine squadron for six months' operational experience; next they are assigned to the University of Rochester for an academic year of training in radiobiology, leading to a Master of Science degree. Subsequently each officer is ordered to a reactor site at Arco, Idaho for engineering indoctrination for periods varying from three months to one year.

These officers are then ordered to their respective nuclear powered submarines prior to the installation of the reactor core. As you know, all of our future submarines will be reactor powered: three are in operation, four are under construction; 12 have been authorized. The reactors of these submarines, although of the same general design, differ in their engineering characteristics. For this reason a medical experience with one nuclear powered submarine is not necessarily applicable to other reactor installations. It is anticipated that similarly trained medical officers will be assigned to reactor-powered surface ships.

In September 1958 the naval medical school initiated a course for nurse corps officers in clinical isotope techniques with emphasis on the nursing care of patients under study with isotopes and the management of nuclear casualties. It is the intention of the bureau to train a sufficient number of nurse corps officers to permit assignment of one graduate to each of the larger naval hospitals.

Correspondence courses prepared and administered by the naval medical school are available to regular and reserve officers of the three services. Courses in atomic medicine, and

the treatment of chemical warfare casualties are extremely popular. New courses in radioisotope techniques . . . in atomic, biological and chemical defense . . . and the management of mass casualties have been prepared. A total of 503 officers have completed the atomic medicine course and may be presumed to have an intimate knowledge of Admiral Behren's text. As of April 30, we had 378 officers enrolled in the atomic medicine course — of this number, 175 are U. S. Public Health Service officers.

For the training of medical support personnel, the naval medical school publishes a variety of manuals designed as laboratory and field guides. Within the past two years, three new manuals have been prepared and four completely revised. A new x-ray manual is in press, and a new radioactive isotope therapy technicians' manual has been completed. It is the policy of the naval medical school to make these manuals available without cost to the military services, the public health service, civilian physicians, medical students, and technicians.

In December 1957, the secretary of the navy directed that the teaching of self help and first aid be "augmented, modernized and standardized" on a navy-wide basis. This navy-wide training program is based on the philosophy that first things come first — training is first at every level and for an effective passive defense plan — first aid and self help training is unquestionably first.

Reserve Officers Have Vital Role

The navy medical department, in common with the medical services of the army and the air force, recognizes its debt to its reserve medical officers. World War II and the Korean conflict brought many back to active duty where their skills in the various specialties contributed immeasurably to the fine record made in conserving life and health in the armed forces. The excellent way in which they performed, their fine devotion to duty and to humanity in general will always be a lasting tribute to military medicine, to the nation and to themselves.

You may be assured that the importance of the reserve medical officer is fully recognized and is no less so now than it has been in the past. As a matter of fact, the need for the reserve has perhaps never been greater than it is right now because of the part they will be called upon to play if nuclear warfare is ever loosed upon the world.

Yearly the race for weapons supremacy proceeds unabated. The weapons are designed for total warfare, the characteristics of which have never been experienced and can only be imagined. Survival will become of primary importance — not only national survival, but racial survival. We plan to survive in this country, and to do that we must have medical pre-planning. That is why the reserve medical officers are more important now than ever before. Their training in organization, logistics and combat experience will be invaluable qualifications.

I urge all of you who belong to organized units to take an active part in the medical preparedness planning for disaster in your communities. Reserve units so engaged have effected excellent liaison with all armed forces within their areas and thus have added to the strength and security of planning which we must have between civilian and armed forces to effect an adequate disaster program for our nation.

I would point out the more tangible needs for the reserve medical officer, and that is in medical disaster planning for local disasters in your community. The Bureau of Medicine and Surgery is cognizant of the capacity. I urge you who have not participated, to enter this field of community service for which the armed forces have prepared you. In this way you can forge another link to the chain that affects the defense and security of the nation.


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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.
7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notifed within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.
8. Illustrations — Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.
9. Reprints — Reprints must be paid for by the author at established standard rates.

The Editor is always ready, willing, and happy to help in any way possible.

(The Opinions expressed in original contributions do not necessarily express the opinion of the Editorial Board.)

COMMITTEE CHAIRMEN PLEASE NOTE

IN THE future, *Arizona Medicine* will attempt to cover the action of the various boards and committees as submitted to the governing council of the Arizona Medical Association and adopted by that group.

We strongly urge the chairmen of the various committees to promptly submit their reports so that the membership may be fully cognizant of the action as taken by their represntatives.

M.D. SHORTAGE AHEAD?

Reprinted from The AMA News Nov. 3, 1958

MUCH HAS been said and written in recent months about whether America's present medical schools, and those planned, can train enough physicians to care for a rapidly growing population.

While medical leaders seemingly agree that continued population growth with its accompanying social and economic changes will bring about a need for more physicians, there is disagreement on how many will be needed.

It so happens that for years the physician-to-population ratio in the U.S. has been about 130 physicians for each 100,000 people. And many of the current projections which call for unusually high future needs of medical personnel have been based on this ratio.

But medicine is a dynamic profession, not a static one. Ratios of yesterday have no more meaning today in medicine than in other fields. Take wheat farming for example. The number of wheat farmers in America has dropped greatly in the last decade despite a growing population. Yet the quality of wheat has improved and the quantity produced has increased.

Another reason the number of physicians vs. the number of people has little meaning is that while the number of doctors has increased from 197,605 to 226,625 in the past decade, there has been a decline in the proportion engaged in active practice.

The number of doctors hasn't been as important to the public as the supply and distribution of physicians' services.

In planning for the future, it is extremely difficult to determine whether any ratio might be

reduced or should be augmented. It also is difficult to predict how much new advances in medical science will change the demand for services of physicians.

Less Care Needed

Lengthy physician care already has been reduced by such developments as polio vaccine, new drugs, and antibiotics. In a pneumonia case, the physician once made about 36 visits. Today, he makes about five. Modern transportation, greater concentration of population, increased use of hospitals, new techniques and equipment and the employment of paramedical personnel enable physicians to care for more people in a day. And there is every reason to believe that more and even greater medical advances will be coming in the not too distant future.

But it also is true that with the steady increase in population come greater proportions of the very old and the very young — groups requiring most medical care. And the public has an increasing interest in health and greater ability to pay — partly as the result of new medical-insurance plans.

Pregnancy has been the most important variable in the demand for doctors' services since World War II. But it is as difficult to predict the number of pregnancies 10 or 15 years hence as it is to forecast what the stock market will do a decade from today.

But even if high predictions of future needs are cast aside in favor of the more conservative forecasts, there still are problems ahead in the field of medical education.

To train more and better physicians, medical schools must augment the number of students admitted or additional school facilities must be provided.

During the 1957-58 school year, there were 619 budgeted, unfilled full-time faculty positions in U.S. medical schools — an increase of approximately 90 per cent over the previous year.

Major Problem

This presents a major problem to medical educators. Its magnitude, unless the trend is reversed, has developed to the point where it may jeopardize certain aspects of medical education, research, and care in the period that lies ahead.

If we cannot fill all of the full-time faculty positions in our present medical schools, how will new or expanded schools be staffed?

In the past 15 years, 13 additional four-year medical education programs have been activated in the U.S. Two other schools — Kentucky and West Virginia — are in the development stage. At the close of the 1957-58 school term, the 85 medical schools graduated 6,861. Fifteen years ago, the number of graduates totaled 5,223.

A number of the new physicians are going into other fields rather than into private practice. If that trend continues, it, too, will have a bearing on the number of doctors who must be trained in the years ahead.

It would certainly be unwise to rush into a crash program for the wholesale training of physicians that eventually would result in an oversupply of doctors and a greater shortage of physicians, chemists, and others in the scientific fields. But equally as undesirable would be to face a shortage of physicians 10 or 15 years from now.

It's a complex problem calling for careful and continuous study. The needs must be carefully analyzed. They must be met as a result of sound developments based on the best possible knowledge.

The challenge is one that cannot be ignored.

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REVIEW OF CHINESE MEDICAL JOURNAL

A COPY OF the September 1958 issue of the Chinese Medical Journal is at hand for review. Of extreme interest to the reviewer is the fact that this journal is published in the English language by the People's Medical Publishers in Peking, China. This reviewer has approached "M.D." for an explanation of this anachronism. It is likely that the explanation lies partly in the early development of the faculties at the University of Peking. One may draw a small ray of hope from a situation such as this — it is difficult to deny the essential universality of science and art, and particularly the healing arts. But the ray of light is darkened by one of the news items in the journal dealing with "Canton Scientists Denounce U.S. Nuclear Test Crimes," though similar denunciation is found about Soviet atomic tests. It would appear obvious that politics and medicine are co-ordinated in China.

From the medical point of view, the journal appears to be of high quality. The first article deals with the clinical and statistical aspects of leptospirosis. The bibliography refers to American, British, German, Russian and Chinese literature of vintage ranging from 1886 to 1957. Several articles on schistosomiasis are presented, including one on "A Pathologic Study of Intestinal Schistosomiasis Associated with Cancer," from the departments of pathology and pathoanatomy of the Shanghai First Medical College. A few figures from this article are of interest: "Out of a total of 1,117 autopsies and 54,847 surgical specimens from 1950 to 1955 there were 179 cases of uncomplicated intestinal schistosomiasis (24 autopsies, 155 surgical specimens), 162 cases of simple intestinal cancer (four autopsies, 158 surgical specimens), and 33 cases of intestinal schistosomiasis associated with cancer (four autopsies, 17 resected surgical specimens, and 12 biopsies)." It was found that 79 per cent of simple intestinal cancer and 70 per cent of intestinal schistosomiasis associated with intestinal cancer were located in the rectum and sigmoid. The authors believe, judging by their pathological investigations, that "the schistosomal lesions in the intestine create an environment favorable to cancer development." However, they are cautious about their interpretations, and feel that "adequate evidence of schistosomal infection as a direct cause of intestinal cancer has not been found so far." An interesting observation was that "carcinoma developing on top of chronic schistosomiasis was usually highly differentiated, metastasis occurring late and rarely."

An interesting historical note appears on page 259 concerning "Hua T'uo, the father of surgery." He lived about 190 AD. His fame rests chiefly on his "discovery of the use of anesthetics and his marvelous skill as a surgeon. He gave patients an effervescing powder in wine which produced numbness and insensibility." Many major operations were performed with this aid. Hua T'uo is also said to have been the first exponent of systematic exercise.

"The used doorstep never rots, the same with the body." The system was called the frolics of the five animals, which are the tiger, the deer, the bear, the monkey and the bird. "If one feels out of sorts, just practice any one of these frolics. It will produce sweating, give a feeling of lightness of the body and increase the appetite."

In an article on "Cushing's Syndrome Associated with Bronchogenic Carcinoma," it is of interest to learn that only 16 cases of Cushing's syndrome have been reported in China.

Ophthalmologists will be interested in an article from the department of the history of medicine at Peking Medical College on "Ophthalmology in Traditional Chinese Medicine," the earliest reports of eye diseases going back to the 14th century BC, being inscriptions found written on tortoise shells.

The last 20-odd pages of the journal comprise useful abstracts of Chinese medical literature and reveal an interesting cross-cection of topics currently of interest to Chinese physicians, most of the topics being also of current interest to physicians in various parts of the Western world as well. One puts aside one's first perusal of the Chinese Medical Journal with a feeling of gratitude to one's profession for being a truly international one; a profession that may hold one of the keys to an eventual understanding of each other by the peoples of our earth. It is a pity to find the one sour note referred to earlier in this review, in connection with a meeting of scientists in Canton. The old familiar propaganda phrases about "U.S. imperialist atom maniacs" can fulfill no constructive purpose in an otherwise excellent journal.

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*A Symposium on the Pharmacologic Effects of Dartal on the Liver, Chicago, Searle Research Laboratories, Feb. 7, 1958.

EDITOR'S NOTES

SYMPOSIUM ON CANCER OF THE COLON AND RECTUM

American Cancer Society
New York – October, 1958

XV. *The Preoperative Preparation in Patients with Carcinoma of the Colon and Rectum* – Dr. Howard A. Patterson

THERE ARE few patients in whom preoperative preparation is as important as it is in those patients who are to be operated on for cancer of the colon or rectum. The plan is dependent on the presence or absence of and the degree of obstruction. The competence (or lack of it) of the ileocecal valve may largely determine whether or not surgical intervention must be quickly resorted to or postponed until conditions are more favorable. Careful evaluation of many factors, with appropriate corrective measures, will make a one-stage operation feasible in most cases. Mechanical cleansing of the bowel and the use of antibacterial agents are both of great importance. The best methods of preparing the colon have been brought into better focus in recent years.

The first primary anastomosis was carried out in 1833. This was later followed by the development and limited use of preoperative vaccines, now long discontinued.

In the presence of obstruction, if the ileocecal valve is competent, one is forced to early surgery, the Miller-Abbot tube is dangerous in this group.

In the preoperative preparation of the patient, consider the nutritional status and presence or absence of anemia, the sensitivity of the patient to drugs, the previous use of steroids and the morale of the patient.

It is important to empty the bowel, have it clean, and to eliminate the pathogenic bacteria that are present.

The preoperative laxative preparation varies – castor oil or magnesium sulfate.

In the period around 1937 sulfanilamide came in, this was followed by some refinements in the development of sulfaguanidine, sulfaphthalidine, sulfa-suxidine, etc.

Micrococcic enterocolitis is definitely feared with any of the antibiotics used. Dr. Patterson is now using Neomycin with one of the non-absorbable sulfas, or Bacitracin with Neomycin. Neomycin is given 3 gms. t.i.d. for three days, or Neomycin 10 gms. within a 36 hour period. Certainly the complications are increased with the use of antibiotics.

The greater the distance that one performs the anastomosis from the sigmoid, the less the danger with the anastomosis. A naso-gastric tube is inserted and withdrawn within 48 hours. A urethral catheter is inserted and allowed to remain in place to avoid bladder distension. In all patients with varicosities or thrombophlebitis, ACE bandages are applied prior to surgery.

XVI. *The Abdominoperineal Resection* – Dr. Calvin M. Smyth

Adequate operation for cancer should include: (1) Removal of the lesion and its containing organ; (2) Removal in continuity of all paths of lymphatic spread; (3) Wide enough excision to go well beyond the probable zones of extension by contiguity. The combined abdominoperineal resection (Miles operation) meets these criteria. Since Miles described his original operation, it has been variously criticized as too extensive, not extensive enough, and as unnecessarily sentencing the patient to colostomy life. As procedures for cure, the anterior resection and the "pull-through" operation have been revived, their proponents are enthusiastic about them. This enthusiasm is not shared by Dr. Smyth who believes that their present disadvantages far outweigh the avoidance of abdominal colostomy.

In carcinoma of the recto-sigmoid, there are three directions for spread – upward, lateralward or downward. This latter route becomes only important after the lymphatics above are obstructed. Dr. Smyth encourages a high ligation of the inferior mesenteric vein and artery. Possibly 25 per cent of these patients could have the sphincter saved, but these cannot be determined in advance, and colostomy must be accepted with any lesion below the peritoneal reflection.

It is his firm opinion that the "pull-through" procedure only substitutes a perineal colostomy for an abdominal colostomy.

XVII. *Anterior Resection and the "Pull-Through" Procedures for Cancer of the Rectum and Rectosigmoid Region* – Dr. George A. Hallenbeck

Revision of the traditional concept of spread of cancer of the rectum via lymphatics justified trial of sphincter-saving operations for selected patients with cancer of the upper portion of the

rectum and rectosigmoid. The principles of "anterior resection" and of two types of "pull-through" operations were defined. The acceptability of these operations must depend on their efficacy in controlling the cancers for which they are employed. He feels that they can obtain the same results from "pull-through," the anterior resection, or the Miles operation.

If the lesion is within 5 cm. of the dentate line, they do a Miles procedure, from 5 to 10 cm. above the dentate line, Dr. Smyth encourages a "pull-through" procedure, and above 10 cm. they recommend an anterior resection. He always allows a 4 cm. margin below the lesion to serve as the line for resection.

The abdominal portion of the operation is the same for the three procedures. They obtain a controllable sphincter in 90 per cent of the cases. Many of the patients have temporary tenesmus and 50 per cent of them following the "pull-through" procedure at the Mayo Clinic must wear perineal pads.

Sexual impotence occurs in 90 per cent of the males with the Miles procedure with somewhat better results on the "pull-through" and anterior resection. Dr. Smyth believes that the 5 year survival rates compares favorably between the three procedures.

XVIII. *Principles and Problems of Resection of the Colon for Cancer* — Dr. Leland S. McKittrick

The past decade has seen two major contributions toward increasing the life expectancy of the patient with cancer of the colon. More patients now survive the operation, and since we can more safely remove a segment of the bowel, it then becomes logical to give more attention to the lines of spread and to perform a more anatomical dissection of the regional nodes. If more people survive the operation, and if all of these patients have a more extensive removal of diseased or potentially diseased tissue, more patients should be cured of their disease than when a more limited procedure was carried out and the mortality rate higher than it now is. Most patients with cancer of the bowel will probably not have the good fortune to be operated upon by those especially experienced in intestinal resection. If too extensive a surgical procedure is attempted by the less experienced surgeon, the mortality rate may well be excessive and the total salvage disappointing.

Dr. McKittrick is very loath to ligate the inferior mesenteric vessels at their root and he feels that he has seen a number of cases of gangrene develop where this has been done.

He has noticed mycotic aneurysms at the site of the anastomosis of the large bowel over the iliac vessels from the development of infections in these areas.

While the usual spread is cephalad through the lymphatics, retrograde spread may also occur.

In his experience, 64 per cent of his patients had nodal involvement at time of surgery. Metastases are present in nodes independent of the size of the node and they may skip local nodes. It is Dr. McKittrick's philosophy that "small tumor necessitates large operation." He encourages the surgeon to go as far as is feasible with reasonable ease. He has found that many times a small abscess will form at the mesenteric border in an end-to-end anastomosis, and remain totally asymptomatic.

XIX: *Colotomy and Coloscopy in the Management of Colon Neoplasms* — Dr. Michael R. Deddish

Coloscopy has revealed additional mucosal lesions at the time of colotomy for clinically benign adenomas, and also when colon resection is performed for carcinoma. Adenomas other than those detected radiographically were found in 46.6 per cent of 103 patients examined. Forty per cent of the lesions found in addition to those demonstrated by radiography measured more than one centimeter in diameter. In 32 patients undergoing segmental resection for cancer, additional lesions were found in 47 per cent. Carcinoma was found in 25 per cent of those patients in whom the preoperative diagnosis was that of a benign polyp. Significant prophylaxis of cancer in colonic lesions may be practiced by direct inspection of the mucosa.

Prior to large bowel surgery, Dr. Deddish encourages a five-day preparation of the patient, using a low residue diet during these days, and only clear liquids during the last two days.

He makes a 2 cm. long incision in the taenia and closes this opening longitudinally to do his coloscopies. Inspection is in a counterclockwise manner; additional polyps are found in 50 per cent of the patients where he carries out this additional procedure. He strongly urges a routine examination of the cecum.

In a review of the polyps they have removed, they have found carcinoma in-situ in 5 per

cent, early infiltrative lesions in 13 per cent, and frank carcinoma in 10 per cent.

XX. *Surgery in the Advanced Patient* — H. E. Lockhart-Mummery

Dr. Lockhart-Mummery believes that the deliberate policy of excision of the primary tumor whenever possible leads to the unexpected salvage of certain patients who would otherwise succumb to their disease.

At St. Mark's Hospital in London, they found cancers in the rectum and rectosigmoid were resectible in 46 per cent of the cases in 1928, while they were resectable in 93 per cent in 1957. They have an operative mortailty of 3.6 per cent; 16.5 per cent of their procedures were considered palliative, 76.6 per cent radical procedures intended for cure.

Cancer of the colon they found resectable in 63 per cent in 1928, and 94 per cent in 1954; 20 per cent of their procedures they considered to be palliative.

Length of survival for cancer of the rectum, even in their palliative procedures, 9 per cent lived more than five years. There seemed to be a spontaneous quiescence of the cancer with removal of the primary lesion. The average duration of life was 1.7 years. Most of them had a fairly satisfactory life during this period.

Removal of the solitary metastasis in the liver has been carried out in 16 patients. Twelve of them survived operation for an average survival time of 2.7 years.

Forum by Drs. Smyth, Hallenbeck, McKittrick, Deddish, Lockhart-Mummery and Patterson.

Preoperative preparation varied considerably. 1. Used Sulfasuxidine, attempted to get a clean, dry bowel, would not use antibiotics except for specific indications in the postoperative period. 2. The second man used a combination of Neomycin and Terramycin and then used SRD postoperatively. 3. One used magnesium sulfate daily and Sulfasuxidine. 4. Another attempted to get the bowel clean. Used preoperatively Neomycin 10 gms., and antibiotics postoperatively. 5. The fifth used Sulfaphthalidine, but no antibiotics.

There was considerable discussion and a strong feeling that antibiotics should be used only if indications existed.

Dr. Coller has found that resecting of liver lesions at the University of Michigan has been done without remarkable results.

The possibility of going in at four to six weeks in the patient with the liver lesion was considered, feeling that the second look procedure might be of value here. At this time see what the lesion had done, whether it was an active lesion, whether it was a relatively quiescent one. Consider then the possibility of a liver resection.

None of the men present recommended an "extended" Miles procedure.

In coloscopy, Dr. Coller examines both ways from the incision as does Dr. Lockhart-Mummery. They were the only other men who carried out coloscopy at the time of their abdominal surgery.

In a total resection of the colon, if not more than a few cm. of the ileum are removed, the patient will rarely develop diarrhea.

In the child with a few polyps, go very slow for you may have a patient who in time will develop polyposis. In the adult with more than five polyps, do a resection of the colon.

At the time of surgery, 6 to 8 per cent of the double lesions are detectable in the colon.

In a voting to see what procedure would be carried out at the peritoneal reflection, the following votes were cast: One would do an anterior resection, one would do an abdominal perineal resection. Dr. McKittrick wants at least 10 cm. below the lesion, he would not recommend a "pull-through" procedure, he has noted 11 per cent recurrence at the suture line. A second man recommended an anterior resection, two more recommended abdominal-perineal resections. All of them agreed that in the obese it is best not to try an anterior resection. Dr. Coller was satisfied with the 6 cm. margin below the tumor. A third man was satisfied with an anterior resection. Dr. McKittrick recommended an anastomosis of the side of the colon to the rectal stump. A fourth man recommended abodminal-perineal resection and Dr. Lockhart-Mummery recommended resection for lesions at or above the peritoneal resection to be anterior. So you can see from this faculty of eight that four recommended anterior resections and four abodominal-perineal resections for the lesion at the peritoneal reflection.

With acute intestinal obstruction, five were in favor of a cecostomy, all recommending a tube procedure, three recommended transverse colostomy.

None of the panel used nitrogen mustard and they felt that it was not in a position to be generally adopted. None of the men advocated

a prostatectomy in association with abdominal perineal resection. Dr. Coller encourages primary closure of the perineal wound and the application of positive suction to the area. He further recommends that if the abdominal wound is contaminated, to do a delayed closure, packing it with gauze, doing a secondary closure at 48 hours, with sutures that were previously inserted. This delayed closure he uses as his skin closure in all closures of colostomies.

Dr. Smyth does not use the two-team technique. Dr. Lockhart-Mummery has frequently used a two-team technique in abdominal perineal resection. At Memorial Hospital, they find that it has some advantages, but they do not recommend its routine use.

They have found 10 per cent of ovarian mestastases in lesions of the colon and rectum, 3 per cent had ovarian cancer.

In the malignant villus adenoma of the rectum one should do an abdominal-perineal resection, for these tend to recur locally.

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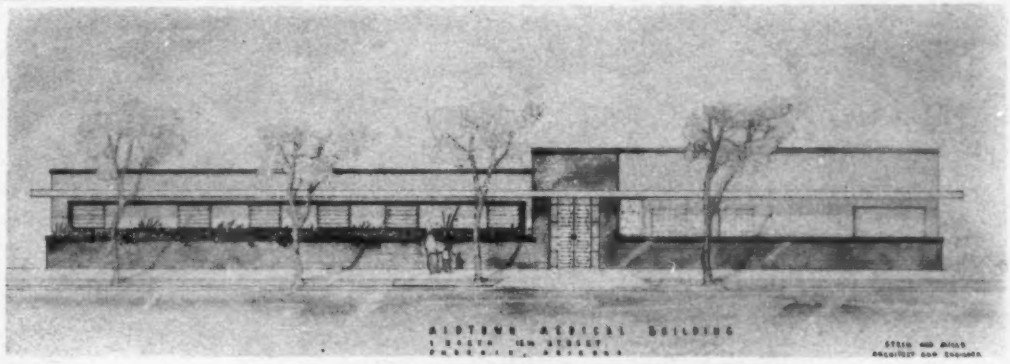

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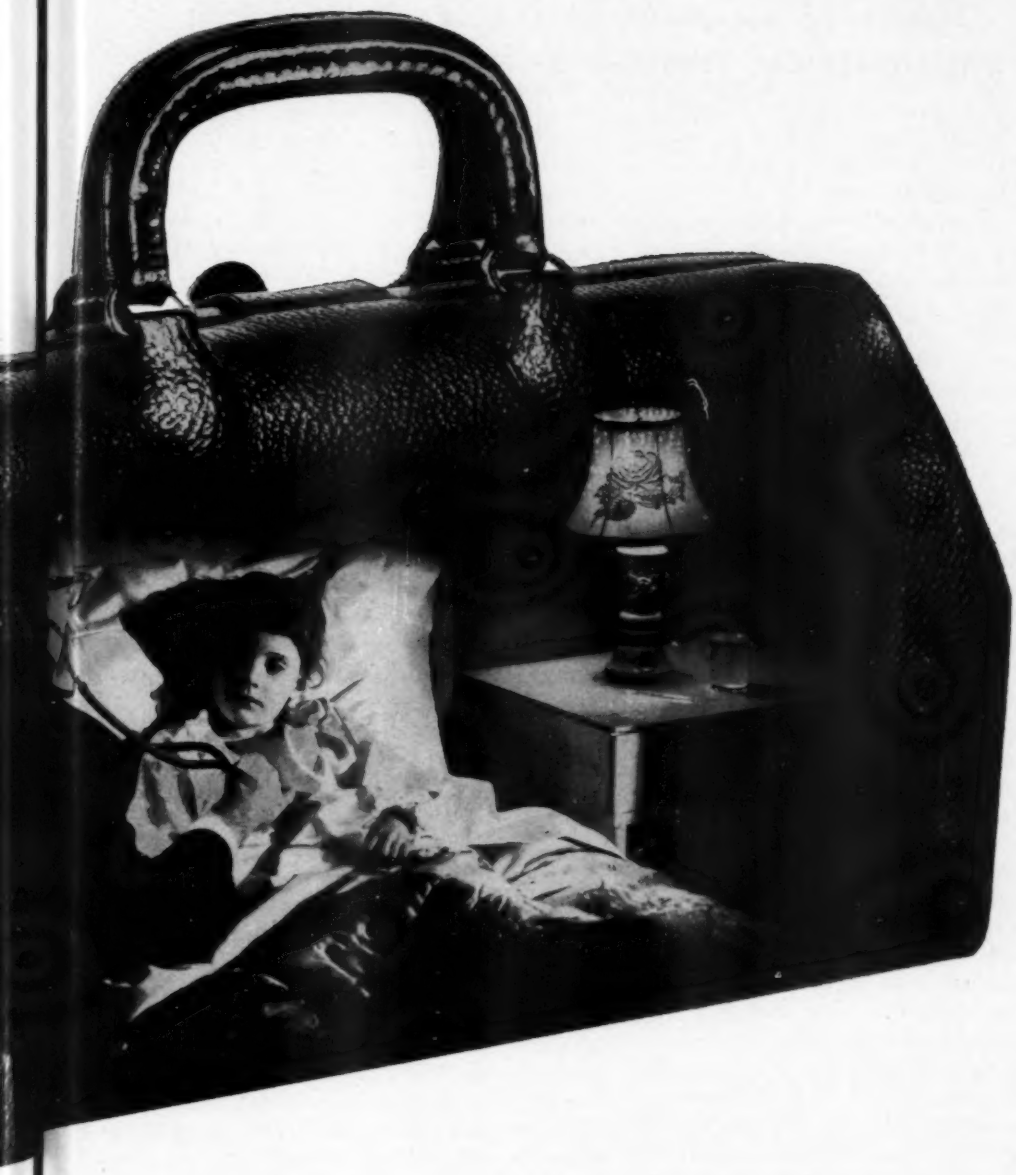

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Topics of Current Medical Interest

THE BIOMEDICAL PROBLEMS OF THE ATOMIC AGE*

By Charles Little Dunham, M.D.**
Washington, D.C.

WHEN in 1942 controlled nuclear fission ushered in the "Atomic Age," it raised many questions which physicists have been busily trying to answer ever since. In addition, it posed a host of new problems for those of us in the health sciences.

The hazards of ionizing radiation were already understood in a general way. The cause and effect relationship between exposure to x-rays or the emanations of radium and skin cancer was clearly recognized by 1902, a bare seven years after the discovery by Roentgen of x-rays. It has been known since the mid-20s that radiation of germ cells can result in gene mutation, and radiation exposure during embryonal life may result in developmental abnormalities. Only a few years later, radiation-induced leukemia in mice was observed.

What is now named the National Committee on Radiation Protection and Measurement had been co-operating with the International Commission on Radiological Protection since 1929 in developing recommendations concerning the maximum permissible exposure of the relatively few adult workers using x-ray machines, radium and later other sources of ionizing radiation. The recommendations of this committee were based on scientific facts, obtained both experimentally and by observation of injuries incurred by pioneers in radiology and radiological physics, and by the workers in the luminous dial industry.

Consequently, Dr. Stafford Warren, Dr. Robert Stone and Dr. Hymer Friedell, who were principally responsible for the medical program of the Manhattan Engineering District, wartime atomic bomb project, enlisted the services of the best radiological physicists and industrial hygiene specialists then available in developing an extraordinary program of radiation protection for the workers on the project. Furthermore, they sensed the need for much more information on the biological effects of ionizing radiation and initiated a broadly conceived research program for that purpose. This program drew on the talents of many university scientists and scientists in the government notably from the National Cancer Institute and the National Bureau of Standards. It clearly defined the syndrome of whole body radiation injury before it was observed in Japan in 1945. It initiated experimental studies on the genetic effects of radiation, the effects of radiation on life span, and on the carcinogenic action of internally deposited radioactive materials.

The program, even though hurriedly conceived in war-time, did not neglect the more basic studies of the action of ionizing radiations at the molecular level in organic systems. The significance of free radical formation and of oxygen in radiation effects was studied. In fact the work going on now in this country in radiation biology is largely an extension and refinement of these and the earlier studies, mentioned above.

With large electrical power-producing atomic plants such as the one at Shippingport, Pa., now a reality and nuclear war an ever present threat, the need to know has not lessened. As is so often the case, the more we have learned about radiation effects, the more we have come upon new and in many instances more difficult questions to be answered. Nevertheless we have arrived at a state of knowledge of the subject which permits me to state unequivocally that there is no man-made general environmental hazard about which we know so much. For instance there is no comparable body of knowledge concerning the effects of smog upon which to base an estimate of its possible deleterious effects on our citizens.

Some of you would prefer to hear about the uses of radioisotopes and the tools of our atomic energy program in medicine and agriculture rather than the possible harmful effects of ionizing radiation.

The things I will talk about today are equally challenging to the scientist and are of immediate importance whether an era of permanent peace lies ahead or a nuclear war.

Atomic energy is here to stay and, like fire, it can be a great boon to mankind. Like fire,

*Alpha Omega Alpha Lecture, George Washington University, School of Medicine, April 12, 1958.

**Director, Division of Biology and Medicine, U. S. Atomic Energy Commission.

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if used carelessly it gets out of hand, and it can cause death and destruction of property. To date, remarkably little of this sort of thing has occurred — for example — only two deaths — one in 1945 and one in 1946 have been directly and immediately attributable to radiation in our entire atomic energy industry. If used in war, fire can be devastating. Remember that more property was destroyed and more people were killed in the July 10, 1945, fire raid on Tokyo than at either Hiroshima or Nagasaki from atomic weapons now a reality, all this would pale by comparison in the event of a nuclear war.

There are large areas for scientific study where we must have much more information. We must develop more definitive methods for treating radiation injury. We must define ever more precisely the effects of any given type and rate of exposure to radiation on the human organism, and we must determine what effects are irreparable and what effects are reparable.

Whole Body Radiation Injury

The syndrome of very severe whole body radiation injury as seen in Japan following the atomic bombings of Hiroshima and Nagasaki occurred in individuals receiving 1,000 *r* or more of radiation. These persons died in a few days of a fulminating illness characterized by nausea, vomiting, diarrhea, prostration and a gradually rising fever. Hemorrhage, ulceration of the gastrointestinal tract, and sepsis were not prominent features of their illness. On the other hand, persons suffering severe and moderately severe injury, generally those who received 300 to 800 *r*, developed initial transient nausea and vomiting. This was followed by aplasia of the bone marrow and lymphoid tissues with an attendant severe interference with the normal defense mechanisms against bacterial disease. During the second to third week following exposure, hemorrhagic phenomena, oropharyngeal and gastrointestinal ulceration and epilation set in and, in fatal cases, led to exitus in the next one to three or four weeks. In non-fatal cases gradual recovery occurred as the bone marrow once more regained its ability to form new blood cells.

There are a number of experimental procedures which can be used in the laboratory to double and even triple the ability of an animal to survive whole body radiation exposure. One can pre-treat mice or rats with half a dozen drugs and double survival. Not one of these drugs is yet proved as a practical prophylactic in humans against exposure to radiation. Either the timing of the medication has to be too precise to be practical for emergency situations, or the toxic dose of the drug approaches too closely the effective dose.

In rodents, isologous, homologous and heterologous bone marrow infusions given during the first 24 hours after exposure have proved effective in descending order of effectiveness. Homologous transplants have *apparently* been effective in monkeys. Heterologous transplants (rat to mouse) have had some success in rodents. In man, homologous transplants have been tried in a few patients with aplastic anemia. These anemia cases were either idiopathic or caused by radiation or nitrogen mustard therapy. No successful takes have been reported to date. So far the experience in human beings follows the pattern seen with skin grafting. It is easy to graft skin from one identical twin to another; impossible to do it from a non-identical twin or other sibling. It is hypothesized that the recipient must have received, as in the experimental animal, a dose of radiation sufficiently large to knock out quite completely and for a matter of weeks not only the bone marrow, but the immune mechanisms as well if the transplanted marrow is to take permanently and permit survival of the animal. Certainly here is a challenge. Even if this hurdle is passed, there is still the problem of preservation and stockpiling of human marrow. If the latter problem can be solved satisfactorily, maybe each person could bank some of his own marrow against the day of need. Meanwhile there is excellent evidence for the value of antibiotics and of platelet infusions as a means of tiding the patient over the critical period during which his marrow and his ability to form antibodies are at a low ebb.

Internally Deposited Radionucleides

One of the great challenges is the problem of removing internally deposited radionucleides. EDTA (ethylenediamine-tetra-acetic acid) and zirconium citrate have proved clearly useful in increasing the excretion of plutonium still circulating in the blood or not firmly bound to bone or other tissue. We have nothing which will do even that for strontium-90 let alone selectively remove deposited strontium-90, plutonium or radium from bone without decalcify-

ing the bone in the process.

These are the areas in the therapy of accidental radiation exposure or contamination where some, if not spectacular, progress has been made. I feel certain that continued efforts in the future will be rewarded with the development of more effective and specific approaches to the treatment of persons who may be involved in various types of radiation accidents.

Radiation Burns

I am less sanguine about radiation skin burns. Here we are dealing with a slow, relentless process which follows local exposure of the skin to several thousands of roentgens. In the acute form in severe cases, there is first erythema then blister formation with subsequent healing with scar formation and a disordered blood supply. Then follow years of repeated break-down and healing, often eventuating in cancer. In the form of burns resulting from chronic repeated exposure as occurred in the early radiation workers, the late stages are the same, but the early acute stages may have been less obvious or, from a clinical standpoint, absent altogether. With all due respect to my dermatologist colleagues, our knowledge of the therapy of radiation burns has remained superficial. The problem is largely a chronic one and hence lacks the challenge of a dramatic event. Nevertheless, the mere fact that many years intervene between insult and end result affords an opportunity to study the chain of events more closely and see if some means of breaking the chain cannot be developed. I know of only one group of investigators in this country methodically tackling this problem at the biochemical and histopathologic levels. Their studies are directed primarily at the initial reactions in the skin to moderate doses of radiation. Yet here is a problem which confronts the radiotherapist daily, and it limits the amount of radiation that can be given to a cancer. It is certainly not going to be an easy one to solve, but whether we ever have an atomic war or not, it needs a lot more attention than it is getting today.

Inhalation of Radioactive Materials

Another challenging problem is that in certain situations the hazard from radioactive materials may depend solely on the introduction of the material into the body by way of the lungs, or as in the case of inhalation of tritium gas, the effect on the lung itself may be the critical factor. The study of this type of hazard has two facets. One is the definition of the permissible concentrations of various radionucleides in soluble and insoluble forms in the air. The other is a definition of the end result in humans of deposition of excessive amounts of radioactive materials in the lung and what to do about it.

Let us take the problem as it presents itself in a fairly simple form. Plutonium metal is to all intents and purposes a pure alpha emitter. The radiation cannot penetrate the horny layer of the skin. Plutonium can therefore be handled with impunity as far as skin burns are concerned. It is very poorly absorbed from the intestine, of the order of 1/1,000th to 1/10,000th of a per cent, so it is not too great a hazard as an ingestant. If inhaled, some of it is retained in the lung and eventually moves to the liver and bone. Plutonium is more toxic than radium. The maximum permissible body burden for workers is 0.04 microcuries as compared with 0.1 microcurie for radium. The Number One question now is: What is the greatest concentration *in air* which can be permitted, with the assurance that no worker exceeds the permissible body burden? Obviously there are economic considerations which come to play here. Plutonium is used in nuclear weapons, and will certainly some day be used in power reactors. To keep the air concentrations in our plants down to permissible levels is very expensive.

We know that in general, particles larger than 5 micra in diameter are not likely to remain in the lung very long. They find their way up the bronchial tree and are swallowed or spit out. Of the smaller particles, we believe that those reaching the alveoli are trapped but we have no good data in humans on what percentage of fine particles, i.e., less than 5 micra, are actually retained. Because of this gap in our knowledge, those concerned with establishing the maximum permissible concentrations in air have had to put what may be relatively large factors of safety in their recommendations. Obviously we must obtain this information as soon as possible. It is not easy, and we certainly do not wish to find out about it in the same manner in which we learned about how much radium has to be in the bone to cause bone cancer.

Disposal of Radioactive Wastes

Before speaking of some of the hazards of atomic energy activities which are currently the subject of so much discussion in the lay press, I should mention the challenge of the Burgeon-

ing problem of handling and disposing of large quantities of liquid radioactive waste products. There are two aspects. In these so-called wastes is an almost limitless supply of radiostrontium and radiocesium and a host of other radioisotopes which, if they can be removed and isolated, could be put to commercial and medical uses. Low level and in general relatively short-half life radioactive wastes from experimental laboratories and the like are today encased in cement in oil drums and dumped off our coastal waters. There is much talk of the hazards of dumping this material into the ocean. It is said that we must learn much more about the oceans, the movements of the waters at great depth, and the mixing times at varying depths. Fortunately the difficulty of safe transportation of the high level radioactive wastes from large atomic reactors makes this an impracticable procedure at the present time, otherwise we might be wasting irretrivable material of great potential value. Meanwhile the problem of safe containment of the material at its source is a very real one and taxes the ingenuity of the radiation physicist – the sanitary engineer, the geologist and the metallurgist, to the utmost.

In like manner, the problem of airborne radioactive contamination challenges not just the radiation biologist, the industrial hygiene engineer and the health physicist, but equally the meteoroligist, the soil chemist, the plant biochemist, the aquatic biologist, and the radiochemist.

Chronic Low-Dose Rate Radiation Exposures

Recently, there has developed an extreme concern in some quarters over the matter of low level radioactive contamination of man's environment as a result of the testing of nuclear weapons. Almost equal concern has been expressed over what is believed by some to be an inevitable consequence of full-scale development of nuclear fission as a fuel for power production. Even the diagnostic and therapeutic uses of radiation are being looked at with a jaundiced eye.

This is not the place to discuss the psycholgical background of all this. The fact remains that this uneasiness has developed in peoples' minds about atomic energy whether it is used solely for peaceful purposes, or as a part of our national defense effort.

The radiation effects which are talked about the most are the delayed ones. Were the most pessimistic views eventually proved to be true, they would, if they could be measured at all, appear not as clear-cut events readily related to the cause, but as *relatively* small statistical increases in the number of cases of bone cancer, leukemia and congenital abnormalities, or as a shortening of the average life span. There is little doubt that some price in human suffering will be paid for atomic energy. This is not a unique situation. It has been true for every technological advance from the discovery and use of fire to the automobile and the airplane. It is for the biological sciences to establish the cost, and it is for society to decide whether the price is too great.

Genetic Effects

In the field of genetics, there are two principal hazards with which we are concerned when we study the effects of ionizing radiation as a mutagenic agent. First, there is the possible risk to the human race as a whole. There is undoubtedly some amount of radiation which, if the entire race were subject to it, would result in a mutation rate which would lead eventually to degradation of the species. On the other hand, the maximum tolerable mutation rate for humans, tolerable in the sense of survival of the race, is not known.

The National Academy of Sciences' Committee on the Effects of Atomic Radiation has estimated that in the normal course of events in the next 30 years 100 million children will be born in this country and that there will be among them some 2 million with tangible genetic defects. In the whole world 2 billion children will be born during the same period, of which some 40 million will have tangible genetic effects. If 40*r* is taken as the radiation dose per generation necessary to double the present "spontaneous" mutation rate, the 10*r* dose per generation mentioned in the NAS report as tolerable but not harmless would add in the United States alone 50,000 tangible defects in the first generation, and eventually about 500,000 per generation, i.e., about 16,000 per year. A dose of 0.13*r* to the gonads per U. S. generation is currently estimated to be incurred from the present rate of weapons testing. This would produce in the first generation an additional 650 persons with tangible genetic defects, and if this rate of exposure continued, there would eventually be 6,500 per generation. There would in addition be about 5,000 embryonic and neonatal deaths,

stillbirths and childhood deaths in the first generation and about 50,000 per generation eventually. In addition, there would be a larger but unknown number of minor intangible defects. For the whole world, you would have to multiply the figure by about 20. In absolute numbers, this is large, but in terms of the estimated genetic effects of natural background it is a small fraction, 1/40th or 1/10th, depending on the true doubling dose, and in terms of the genetic effects of diagnostic x-ray gonadal exposures, it is of the same order. In terms of the presently estimated incidence of such events, this would mean eventually if weapons testing continued indefinitely at the present rate an increase of 1/300th. If the doubling dose were as low as 10*r*, which is held to be unlikely, the additional burden would be 1/75th.

What are these figures based on – thousands of experiments in fruit flies, a few very large experiments involving hundreds of thousands of mice in which only seven geneloci have been studied, and the large human genetics study in Japan by the Atomic Bomb Casualty Commission, plus a few human genetics studies in non-irradiated populations. The figures are crude. They must be improved. There are needed additional careful human genetics studies involving a tremendous amount of work – taking advantage of documented consanguineous marriages and using blood types as well as gross indices of genetic change. One of the big problems is the fact that many human abnormalities – in fact, most – are not clearly delineated as to being genetically determined or developmental in origin. Indeed many of them, like mongolism, seem to be the result of both genetic and environmental factors.

It has been generally agreed that radiation mutations are cumulative and directly proportional to dose, down to zero. Yet below 25*r* no studies have been done in other than single-celled organisms. Such studies may never be done in mammals, for in order to test accurately even a few loci at 25*r* would require an experiment involving a million or more mice. This means that much more basic work will have to be done at the macro-molecular level to establish once and for all that the single hit concept of radiation induction of gene mutation which seems to hold for bacteria, viruses and the fruit fly, holds, for mammals as well as low dose rates, and with low total doses.

Life Span

Except for high level radiation to vital organs, the life shortening effect of ionizing radiation is the result of total blood exposure, or it may manifest itself in succeeding generations as a result of genetic damage. There is considerable experimental data in small mammals on the effects of fairly large single event whole body exposure, i.e., 100 to 200 *r* and more given either once or repeated. There is much less information at smaller dose increments. In general, it can be said that with large increments there is a curtailment of life expectancy from the time of exposure of approximately 25 per cent per LD/50. Thus a single dose of 200 *r* would, on the average, be expected to reduce an individual's life expectancy from that point on by roughly 12.5 per cent. With smaller increments, totalling a few *r* to upwards of 100 *r*, the effect in experimental animals is less marked and probably can be explained on the basis of a partially effective reparative process, so that the curtailment of life expectancy is a little less than 1 per cent per 100 *r*. If this holds for humans, an individual who had accumulated at the age of 20 years approximately 100 *r* in increments of a few roentgens at a time, and who would normally be expected to live another 50 years, would on the average lose 4-5 months of his life span.

There is no definite information at low dose rates, i.e., 0.1 *r* per day or 0.3 *r* per week, which is in the range of the permissible levels as recommended by the International Commission on Radiation Protection. A few experiments have been done in mice and rats. In each instance, the average life span of the irradiated group was slightly higher than that of the control. It appears, however, that the sparing effect is during middle life and perhaps chronic low level exposure has some sort of non-specific effect by permitting survival of experimental animals in the presence of certain ectoparasites. In any event, the longer-lived animals in the irradiated group do not live any longer than the longer-lived animals in the control group. The causes of death in these low dose level experiments are not noteworthy, though in one experiment there was an increase in the number of cases of leukemia. However, there was not a sufficient number of cases appearing early in life to affect the over-all statistics. In any event, a dose rate of 0.1 *r* per 30 years period would reduce the average life span by at the most a few days.

To all intents and purposes, premature death resulting from radiation of experimental animals is indistinguishable from death from normal causes. Is radiation-induced aging identical with the natural aging process, or isn't it? If it is, what a wonderful experimental tool we have for studying the aging process! Aging, like the weather, is something people talk about, but do very little about and for the same reason. Maybe now we can do something about it.

Leukemia

The present leukemia rate in the United States is approximately 11,400 cases per year. It is an established fact in many experiments done on animals that large doses of radiation do induce leukemia. In some experiments, although the total number of cases was not increased, the onset was greatly accelerated by the radiation exposure. Though the data from the Atomic Bomb Casualty Commission in Japan are still fragmentary, and will not be complete for a number of years, they can be interpreted as consistent with the concept that large single doses of radiation to man do definitely increase or accelerate the appearance of leukemia. The data which have accumulated on the incidence of leukemia among radiologists is consistent with the hypothesis that large total doses in the vicinity of 1,000 *r*, even when received in small increments, are leukemogenic in some individuals. Finally, the study of Court Brown and Doll in England on the incidence of leukemia in radiation treated patients with spondyloarthritis ankylopoietica suggest that large doses of radiation to the bone marrow may result in leukemia. The control group for this study is so small that one really has no information on what the incidence of leukemia in these patients would have been without radiotherapy. However, if compared with the incidence of leukemia generally among the British population as a whole the effect is clear-cut. For doses of less than 100 *r* in humans, and in statistically significant numbers of experimental animals, there are essentially no data. The available experimental data from fairly extensive studies at higher levels of radiation suggest that, depending on the type of leukemia, the induction curve may be either sigmoidal or linear. Whether or not there is a threshold for leukemia induction by radiation is not known. While it has been generally accepted among students of leukemia that there is some dose of radiation perhaps in the vicinity of 50 *r* below which leukemia is not induced, Dr. E. B. Lewis of the California Institute of Technology, and Dr. Hardin Jones of the University of California at Berkeley, have proposed the hypothesis that leukemia induction from ionizing radiation is a linear function of dose regardless of dose rate and have suggested that for each *mr* exposure per year to the entire population of the United States, there would eventually be an additional 10 cases of leukemia per year. Using this same reasoning, there would be roughly an additional 3,333 cases per year were the population to receive 10 *r* of man-made radiation every 30 years, the exposure consistent with the recommendations of the NAS committee on genetics. The estimate of new cases of leukemia as result of gamma radiation from fallout would be about 40 per year.

It has been postulated also that bone-seeking radioactive nucleids such as radium and radiostrontium might be leukemogenic. All that one can say at the present time is that among the more than 100 cases of radium poisoning in the luminous dial industry, and in an equal number of individuals who have received radium medicinally, leukemia has not developed. I believe there is one questionable case in one of the series. One 100 *uuc*/gram calcium mpc would lead to an exposure to nearby bone marrow of about 0.14 *r* per year, that is, about 10 *r* in a lifetime or less than 5 *r* in 30 years. If Lewis's hypothesis is correct, that leukemia induction is linear with dose to the bone marrow, and were all the bone marrow to receive this dose, which it does not, such a body burden for all people in the United States could mean a 5-10 per cent increase in leukemia cases. There is a considerable body of experimental data indicating that with large single doses, leukemia does not result if a fair fraction of the hematopoietic system is shielded from total body radiation. With a certain type of mouse lymphoma, even shielding one extremity of the animal will vitiate the leukemogenic effect of a large single exposure to radiation. Leukemia is not a simple disease: chemicals, steroid hormones, genetic constitution can all play positive or negative roles in its induction.

Actually, there is very little evidence that very small increments of radiation leading to small doses would of themselves produce an increased incidence of leukemia. It is possible, of course, that co-carcinogenic factors and additive factors will, in a given susceptible individual, prepare

the way for a small dose of radiation to trigger a case of leukemia.

Bone Cancer

The present incidence of bone sarcoma in this country is about 2,000 cases annually. It is quite apparent from the observations of radiotherapists that a dose of 1,000 *r* given locally to the bone is required to induce cancer, and cancer induction by doses of less than 2,000 *r* is a very rare occurrence. As to the induction of cancer by chronic radiation from bone-seeking radionucleids, we have a considerable body of data in humans which I have already referred to. Practically all of this information deals with exposure incurred during adult life. Briefly, it can be stated that no case has come to our attention of bone cancer in an individual exposed to radium in adult life who had left in him at the time of observation (usually 20-30 years after the material was ingested) less than 0.4 microcurie of radium, plus an undetermined amount of mesothorium. The National Committee on Radiation Protection, and the International Commission on Radiological Protection have taken 0.1 microcurie as the permissible radium burden for adult workers. With radium, the exposure to the bone is not uniform. If it were, a person with 0.1 microcurie would be getting approximately 4 *rs* per year to the bone and one with one microcurie would get approximately 40 *rs* per year. Since radium distribution tends to be spotty, one must think in terms of localized areas receiving 10 or more times this average exposure. Strontium-90 tends to be much more evenly distributed in bone. Its radiation is a moderately energetic beta ray as opposed to the principally very short range alpha radiation from radium. The dose to the bone will then be much more uniform. One hundred *uuc* of radiostrontium/gm calcium, the presently considered permissible body burden for the population as a whole, would give about 0.28 *r* per year or 20 *r* in 70 years, i.e., three times the exposure to bone from naturally occurring radioactivity.

Experimental work in mice at low body burden levels is incomplete, but at somewhat higher levels of strontium-90 in mice, the curve for bone tumor production is steeply sigmoidal in nature. In other words, very few if any bone sarcomas will result from 100 *uuc* strontium-90/gram of calcium.

Summary

We can sum up these effects as follows:

The genetic effects are based on a considerable body of data and the estimates given, while not at all precise, do give a fair picture of the likely cost of nuclear energy to society in terms of health. The genetic cost is an order of magnitude greater than the most pessimistic estimates of the cost in terms of leukemia and bone cancer. Taken all together, they are well within our experience of the cost of other technological advances which we accept as necessary for present day life.

The most important single fact about radiation effects and one which will plague you is that except for a severe radiation burn whose chronic sequelae are readily recognized, none of the delayed effects are in any way specific to radiation. A radiation-induced leukemia is not identifiable as such. A radiation-induced mutation has no tag on it telling us it was radiation induced. Nor can a radiation-induced cancer be identified any more than one induced by cigarets. This is all very baffling to the public.

Today what we know about the relationship between exposure and time of appearance of radiation effects permits us to be on relatively firm ground in assessing alleged radiation injuries. But in a very few years there will be more and more confusion. An employer will be hard put to prove in a given case that a certain type illness was not due to radiation exposure. One has to speak, as I have today, in terms of probabilities. It is your growing responsibility, then, to learn all you can about radiation effects both acute and chronic and to keep them clearly in mind when the question of radiation injury comes up. I would hope none of you would do as a radiologist did not long ago in the case of a claim for damages against an AEC contractor. The claimant had a severe chronic non-specific ulcerative colitis, and the radiologist who had read a little about the syndrome of acute whole body radiation injury was aware that it involved a bloody diarrhea. He went on record to the effect that this man's disease could very well have been the result of radiation exposure he had received as a laborer at our Pacific proving ground. His film badges indicated he had received less than one *r* of total exposure. In other words, while there are disease states which can result from certain types of radiation exposure, there are others which cannot, with the greatest stretch of the imagination, be so related.

In the event of a nuclear war or severe nuclear accident, you, as physicians, have a responsibility to diagnose and to treat intelligently cases of acute radiation injury. In addition, you must learn something of the types of radiation accidents which might occur and be prepared to assess the true likelihood of injury to the persons involved; for the present time at least, people incline to panic at the word radiation — witness the Houston, Texas episode which was so beautifully dramatized on TV some time ago.

The atomic age has increased the physicians' responsibilities greatly as it has that of other professions. Its problems are ramifying into nearly every department and school of a university today. The schools of medicine, and agriculture are already deeply involved. There is a whole new field of nuclear energy law developing, both domestic and international. Meterology, geophysics, sociology, political science and even education departments are feeling the impact. This list is not complete. If it were, it would be too long to relate here. It is a fact, however, that I and the staff of the Atomic Energy Commission's Division of Biology and Medicine have day to day, and in many instances very close, working relationships with representatives of each of the specialties I have named.

Nuclear energy is here to stay, as I said earlier, and wherever your future in medicine may lie, sooner or later you will find yourself dealing with some aspect of it.

A GUIDE FOR PHYSICIANS AND LAWYERS

For Handling The Problems Arising Out of
Personal Injury Litigation
And
Medical Malpractice Screening Panel Plan
Prepared Jointly by Committees
of
THE PIMA COUNTY BAR ASSOCIATION
and
THE PIMA COUNTY MEDICAL SOCIETY
1958

I. INTRODUCTION:

THE following working guide is a result of the efforts of a joint committee from the Pima County Bar Association and the Pima County Medical Society. It is submitted with the hope that it will facilitate the solution of mutual problems of the two professions in connection with physical examinations of litigants and medical testimony. It will be of value only insofar as the individual lawyer and physician consider their mutual problems with a sense of co-operation; it should not only benefit each of the two professions, but most of all will aid in rendering better service to the patient or client.

To avoid possible misunderstandings and to aid better relations between lawyers and physicians, and problems which any lawyer or physician may have in connection with personal injury, litigation or arising out of this guide or the Medical and Malpractice Screen Panel Plan, should be referred to a member of the medical committee of either of the Pima County Bar Association or the Pima County Medical Society.

The basic problem simply stated is the old one of human relations. In most cases it could be solved by one simple bitateral action. Before a subpoena is issued, or before the beginning of a trial, a conference between the individual lawyer and physician should establish a common meeting ground. The lawyer who refuses to request such a conference and the physician who refuses to grant such a request need not expect this guide to solve his problem.

There follows a general outline of the principles which should govern physician-lawyer relationship in connection with personal injury litigation.

II. WRITTEN REPORTS:

a. The lawyer

1. No lawyer should ever expect a physician to make a written report concerning the condition of a patient or a party referred to a physician for an examination, unless and until the lawyer advises the physician, preferably in writing, as to the type of examination required.

2. The law on written reports: The Arizona

statute requires " a detailed written report of the examining physician setting out his findings and conclusions." The text of this statute is set forth in Exhibit A.

3. How to request written report: Most examinations of parties other than the doctor's patient are arranged for by stipulation between the lawyers. Whether an examination is to be made pursuant to such a stipulation or pursuant to an order of the court, a request in writing for an examination and report should be made to the physician. A model request for a report by a patient's lawyer is attached hereto as Exhibit B. A model request for an examination and report concerning a party not a patient of the examining physician is attached hereto as Exhibit C.

4. A request for a written report should contain most or all of the following items:

(a) Indicate how and when the injury is claimed to have been incurred.

(b) If report concerns party other than patient, indicate specifically the injuries set forth in the readings.

(c) If report concerns patient, inclose written authorization from client (patient).

(d) Request history, including complaints made by party examined.

(e) Request past history, particularly in cases involving aggravation of pre-existing condition or cases where previous injury or illness is suspected.

(f) Indicate whether partial or complete examination desired. Are special studies such as laboratory work, diagnostic X-rays, or consultation permitted at the examining physician's discretion?

(g) Request a specific diagnosis.

(h) Ask if disability, if any, is temporary or permanent. Ask for prognosis.

(i) Inquire if physician believes that a re-examination is necessary to arrive at a prognosis, or to testify concerning party's condition.

(j) Reaffirm any previous arrangement concerning fees and instruct physician concerning his statement.

(k) Indicate number of copies desired.

(l) What is cost of treatment to date? Estimate cost of future treatment, if such is required.

b. The physician

A request for a report should be in writing Medical terminology should be kept to a minimum. Be specific, concise and prompt and include the specific medical information requested by the lawyer.

1. Report on own patient: If the doctor is giving a report on one of his own patients he should first receive the patient's written authorization. The following points should be covered: (See Exhibit D).

(a) State how, when and where the accident or injury occurred.

(b) Where the person was first seen and the extent of injuries.

(c) Length of convalescence and note if condition is stationary, or patient discharged.

(d) Prognosis if patient is still under treatment and whether disability, if any, is temporary or permanent.

(e) Indicate the presence of any pre-existing disease or prior injury and its effect on present condition; also, if pre-existing condition was aggravated.

(f) Probable cost including the possibility of future medical care.

(g)Omit any reference to insurance.

Since this information is usually readily available to the doctor, it should be furnished at nominal cost to the patient. The report should include original and five carbons.

2. Report on person not under doctor's care: Where doctor is asked to examine a person not under his care, the report should cover the following points: (See Exhibit E).

(a) History of accident or injury as described by person being examined.

(b) The person's account of treatment, and its results. Note particularly if patient is still under treatment.

(c) Examinations of injured part or parts and notation of abnormalities, X-rays, and consultations, if indicated.

(d) Comments on result of examination covering the extent of injuries, conclusions as to permanent disability, if any, and a request for re-examination of the person at a later date if needed to furnish above information or to testify.

(e) The original and five copies should be forwarded.

3. On occasion, the lawyer may request information not covered by a report. This should be promptly furnished. Before appearing in

court, a meeting between the lawyer and the doctor should be arranged.

III. SUBPOENAS

a. Duty as citizen to testify

Our system of justice depends upon being able to require any citizen's attendance at the trial (notwithstanding the inconvenience) and his testimony as to what he knows about the case. The doctor, alas! is no exception.

b. What is a subpoena?

A subpoena is an order of the court commanding a person upon whom it is served to attend court at a certain time and place and testify as a witness in a trial.

c. Lawyers follow different policies as to subpoenaing medical witnesse.

Many lawyers never subpoena the doctors they expect to put on the stand, being content to make personal arrangement with the doctors as to when they will be needed and relying on them to appear.

Other lawyers always subpoena their medical witnesses, contending: (a) It is an advantage for the doctor to be able to testify, if asked, that he came to court because he was ordered to do so; or (b) It will aid the lawyers in securing a recess if for any reason the doctor fails to show up.

d. Recommended policy.

No doctor should take offense at receiving a subpoena. However, if a lawyer plans to have one served upon a doctor he should so notify him promptly, *preferably in advance* of service, where circumstances permit. Discuss with the doctor the exact time he expects to put him on the stand or give the lawyer's best estimate at that time, and arrange to notify the doctor as to the exact time to appear.

Recognizing the demands of a doctor's profession, a lawyer should make every effort to avoid any unnecessary inconvenience or delay. On the other hand, like the surgeon in the operating room, the lawyer is the producer, director and principal actor in the drama of the court room, and will be greatly preoccupied with other important phases of the lawsuit. The doctor is admonished, therefore, to be compassionate if, notwithstanding the lawyer's best efforts, the doctor's testimony does not occur on schedule.

e. The witness fee for per diem and mileage.

Any witness subpoenaed is entitled to demand a witness fee from the person serving the subpoena for per diem ($1.50) plus 15 cents per mile for mileage to be traveled (computed one way). While a subpoena and tender of the aforesaid nominal fee require a witness to attend court and testify as to any facts within his knowledge, this does not entitle an attorney to require a doctor to give his medical opinions or to answer hypothetical questions. As to this type of expert testimony, the doctor is entitled to arrange separately for a fee, as discussed elsewhere herein. No tender of fee is requird in criminal cass.

IV. CONDUCT OF TRIAL FROM PHYSICIAN'S STANDPOINT:

a. The physician as a witness

The physician finds himself with the responsibility of aiding the ends of justice when called to testify in a civil or criminal trial. The testimony given should be unbiased and unembarrassed by expectation of a fee or other reward. He must approach the subject in the capacity of a consultant who makes a diagnosis scientifically and unswayed by any other thought than that of giving a correct opinion in diagnosis.

When the physician takes the witness stand, he should remember that he is not speaking to a medical group, but is speaking to a lay group. The use of medical terminology should be limited as far as possible.

A physician will not be confined to a "yes" or "no" answer when that will not accurately answer the question propounded. If the physician is doubtful, he may ask the court for permission to qualify the answer. If the doctor has reached a conclusion in the case, he should not hesitate to state his opinion.

b. Don't be an advocate or volunteer

A physician should remember that he is not an advocate trying a lawsuit, nor should the physician feel that he is taking sides on any particular medical issue or medical fact. A main concern of the physician is that his findings should be understood by a jury of lay persons. If a physician volunteers information not in response to question without giving thought to the advisability of same, he may hinder rather than aid justice. However, the phyisician should remember that the attorney has little medical knowledge; and, when something is brought up at trial which needs explaining, he should feel free to do so.

c. Courtesy to cross-examiner

The physician should be courteous to the cross-examiner. As soon as the witness becomes discourteous to the cross-examiner, he loses his effect as an impartial witness. Sometimes the jury will take up the side of the attorney and will then discount all testimony previously given. The courtroom is not a place for sarcastic remarks.

d. Don't be afraid to state your honest opinion

Some physicians feel that they should hold in reserve their actual honest opinion. The physician is called as a witness in order that the facts can be made known to a jury. If the doctor feels that a particular patient is malingering, this should be freely stated. It is difficult to make such a diagnosis; but, when the physician honestly has such an opinion, it should be stated. By the same token, if the doctor feels that the patient has serious injuries with future consequences, this also should be freely stated. The doctor may state he cannot answer the question, if he honestly cannot do so. The doctor is not suposed to know every phase of medicine.

e. Don't be "thin skinned"

The physician should not feel that he is on trial, or that the attorney is attempting to trap him. The attorney is very definitely trying to present a case to the best advantage of his client. The purpose of cross-examination is to test the accuracy of a witness. However, this does not mean that the attorney is attempting to discredit the ability or integrity of the physician. The physician should explain the reason for his conclusion and remember that he himself is not on trial.

f. Talk to jury, not over them

The doctor should couch his language in phraseology that the average layman can understand. If medical terms are used, they should be explained. The sole purpose of the testimony of a physician is that the jurors can be apprised of knowledge that takes a physician years to acquire.

g. Private conference of attorney and doctor

It is essential that the attorney and physician consult together so that the attorney can propound proper questions to the physician. This conference is vital to a well prepared trial. The physician should explain the medical report to the attorney and point out the significant findings so that the attorney can properly prepare his case.

h. The province of the objection in the courtroom

A trial is supposed to be conducted according to the rules of evidence. When testimony is offered on a particular subject, and an attorney interposes an objection, that merely means that the attorney requests the court to pass upon the materiality, the relevancy, or the competency of such testimony. If the court feels that evidence be considered along with other evidence in the case, the objection will be overruled. If the court feels that the objection is well taken, the objection will be sustained.

i. Don't refer to insurance

The mere mention or suggestion of insurance in a personal injury action will usually result in a mistrial. This requires the parties, witnesses, and lawyers to attend a retrial of the case at a later time.

V. COMPENSATION FOR MEDICAL REPORTS AND TESTIMONY:

It is impossible to establish a rule governing physician's fees in all cases. Many misunderstandings concerning fees could be avoided by a prior conference between the physician and his patient, or the lawyer calling the physician as a witness.

a. Agreements as to compensation

It is always preferable to agree in advance as to the fees to be charged, either with the patient or with the attorney calling the physician as a witness, if this is possible. Under no circumstances may a physician charge a fee which is contingent upon the outcome of the litigation concerning which he makes an examination or testifies.

b. Reports to attorney for physician's patient

Where a physician makes a report to the attorney for his own patient based upon records which the doctor can obtain from his own office and upon treatment and examinations already made by the physician for which he has received fees for his services or an agreement to pay fees, the physician, if he makes a charge for his report, should make one that is nominal.

If the physician is required to make an additional examination or is required to obtain or interpret records not in his possession, the physician should feel free to make an additional charge for the time and professional services required.

c. Report on person referred for examination only

Where an examination and report concerning a person referred for examination only is requested, the doctor should either make such a charge as is customary in his particular field for such examination and report, or make a charge consistent with the amount of time and extent of professional services involved.

d. Expert witness compensation

1. The physician's charge for testifying in behalf of his patient should be equal to what he would charge his patient for the same amount of time and skill for professional services. If he is required to prepare and testify as an expert witness on behalf of his patient, consideration should be given to this in fixing the compensation.

2. If a doctor is called to testify as an expert witness in a case with which he has had no prior connection, he should receive such compensation as may be agreed upon with the lawyer representing the party who calls him as a witness.

e. Responsibility for payment of compensation

The payment of a physician's fees for examinations and reports and testimony in connection with litigation is always the obligation of the patient or the party to a court action. It is contrary to the Canons of Ethics of the legal profession for a lawyer to agree to be personally responsible for the costs of maintaining a lawsuit. It is often advantageous to request the patient, either directly or through his lawyer, to permit the lawyer to pay the physician's fee directly out of any recovery which may be had in a particular lawsuit.

Nothing in the foregoing is to be interpreted as opposed to the codes of legal and medical ethics.

ACKNOWLEDGENTS:

Many of the principles described were originally outlined by the Cincinnati Bar Association and the Cincinnati Academy of Medicine in their "Standards of Practice Governing Lawyers and Doctors," and a "Guide For Physicians and Lawyers" prepared jointly by committees of Maricopa County Bar Association and Maricopa County Medical Society.

Committee for the Pima County Bar Association:

Robert O. Lesher, chairman; Sidney Weissberger, co-chairman; Richard R. Fish, Robert F. Miller, James M. Murphy, Arthur A. Tannenbaum, Morris K. Udall. Honorary member, Hon. Herbert F. Krucker.

Committee for the Pima Medical Society:

Ivan M. Chesser, M.D., Chairman; John R. Schwartzmann, M.D., William R. Manning, M.D., Charles P. Neumann, M.D., John K. Bennett, M.D., L. D. Sprague, M.D., Robert E. Hastings, M.D., Leo J. Kent, M.D., and O. Joseph Farness, M.D.

EXHIBIT A:

"21-737. Physical and mental examination of persons – Order for examination. In an action in which the mental or physical condition of a party is in controversy, the court in which the action is pending may order him to submit to a physical or mental examination by a physician. The order may be made only on motion for good cause shown and upon notice to the party to be examined and to all other parties and shall specify the time, place, manner, conditions, and scope of the examination and the person or persons by whom it is to be made. (Rules Civ. Proc., Rule 35 (a.)"

"21-738. Physical and mental examination of persons – Report of findings. (1) If requested by the person examined, the party causing the examination to be made shall deliver to him a copy of a detailed written report of the examining physician setting out his findings and conclusions. After such request and delivery, the party causing the examination to be made shall be entitled upon request to receive from the party examined a like report of any examination, previously or thereafter made, of the same mental or physical condition. If the party examined refuses to deliver such report, the court on motion and notice may make an order requiring delivery on such terms as are just, and if a physician fails or refuses to make such a report, the court may exclude his testimony if offered at the trial.

(2) By requesting and obtaining a report of the examination so ordered or by taking the deposition of the examiner, the party examined waives any privilege he may have in that action or any other involving the same controversy, regarding the testimony of every other person who has examined or may thereafter examine him in respect of the same mental or physical condition. (Rules Civ. Proc. Rule 35 (b)."

EXHIBIT B:

March , 19

Dr. M. D. Smith,
Tucson, Ariz.

Re: Jones vs. Brown

Dear Dr. Smith:

Your patient, Mrs. Mary Jones, has retained me to file an action against Mr. Brown to recover damages for the personal injuries which she suffered on March 1, 1954, when her car was run into by the automobile of Mr. Brown. Mrs. Jones tells me that she suffered a herniated disc and that she has been continually under your care since the date of the accident.

My investigation discloses that Mrs. Jones's car was stopped and another automobile collided violently with the rear end of Mrs. Jones's automobile.

I should appreciate it if you would send me an original and three copies of a report showing the history, both past and present, related by Mrs. Jones; describing briefly the treatment which you gave her; describing your diagnosis at the time you first saw her; indicating the disability now suffered by Mrs. Jones, or which she might likely suffer in the future; also indicating, if possible, your prognosis as to the outcome of her condition, and also indicating what future medical treatment might be required.

I am enclosing a form of authorization which Mrs. Jones has signed to enable you to send your report to me. I have also requested Mrs. Jones to contact you pertaining to your charge for making this report, and also pertaining to the payment of any special expenses which you might incur in making this diagnosis or prognosis.

It seems probable that this case will be tried some time during the month of July of this year, and I will notify you within at least a month before the trial date. I will also arrange to contact you for an interview approximately one week prior to the time of trial.

Very truly yours,

L. L. BRADY

LLB:hr

EXHIBIT C:

March , 19

Dr. Robert Medic,
Tucson, Ariz.

Re: Brown vs. Jones

Dear Dr. Medic:

I should like to confirm my conversation with your secretary that you will examine Mrs. Mary Jones on April , 19 , at 2 o'clock p.m., at your office.

This examination is pursuant to a stipulation entered into between Mrs. Jones's attorney and myself. Our stipulation contemplates that you may perform such tests and such an examination as you may deem necessary to properly diagnose Mrs. Jones's present condition. This, of course, included, but is not limited to, x-rays, laboratory tests, or consultation, should you deem is necessary.

In her complaint, Mrs. Jones claims to have sustained the following injuries as the result of an automobile accident which occurred on March 1, 1954: "That her back and neck were sprained, that she suffered a herniated intervertebral disc, that she lost the use of her left arm and hand, that she has no feeling or sensation in portions of her left hand, that she suffers constant headaches and eye aches, and that she has been permanently disabled."

I should appreciate it if you would, at your earliest convenience, forward me an original and five copies of your report. I should also appreciate it if you would, in addition to obtaining a past and present history from Mrs. Jones and furnishing a diagnosis, indicate whether or not Mrs. Jones is at the present time disabled from performing her usual duties as a receptionist, whether disability if any, is temporary or permanent, your prognosis, and whether her condition is stationary.

I am enclosing herewith a copy of a report by Dr. M. D. Smith pertaining to Mrs. Jones's condition.

After you have completed your examination, would you please send me your statement in duplicate.

COUNCILOR & O'BRIEN

By.....
John O'Brien

JO:hr

EXHIBIT D:

Mr. L. L. Brady

April , 19

Re: Mrs. Mary Jones, Age 48

Dear Mr. Brady:

At your request, we are furnishing you a summary of our treatment in the case of Mrs. Mary Jones, a patient of ours who had been injured on March 1, 1954.

Mrs. Jones states she was riding in an automobile as the driver which was stopped at a red light. She states she was struck from the rear by another car causing her to be pushed violently forward. In doing so Mrs. Jones suffered a severe snap of her neck. She was momentarily stunned,

but was able to regain her composure and remain at the scene of the accident until the accident was investigated by the proper authorities. She then went to her home where, after a period of one to two hours, she developed a very acute soreness of the neck and contacted me. I met her at the hospital where she was examined.

Our examination at the hospital showed that Mrs. Jones had a very stiff and sore neck. She had a small range of motion. She was quite emotionally upset and complained bitterly of pains throughout her neck. Because of the acuteness of the symptoms, Mrs. Jones was placed in the hospital where she was placed in cervical traction for her acute neck pains. At the time of her admission, x-rays of her neck were taken which failed to show any evidence of bony injury. However, our diagnosis on admission to the hospital was an acute whiplash injury to the neck and she was treated for this condition during her stay in the hospital. She remained in cervical traction in the hospital for a period of 10 days after which she was fitted with a cervical collar and was allowed to go to her home. She then took a series of physiotherapy treatments at our office and still remains under the care of our physiotherapist for her subjective complaints.

About three weeks following her injury, Mrs. Jones complained of an aching and burning type of pain which affected her in the upper arm and along the outer aspect of the right forearm extending into the ring and little fingers of her hand. This has been quite persistent and quite annoying. It has been aggravated by coughing and sneezing and occasionally on suddenly turning her head, she develops an acute pain in her arm, forearm, and hand. This in all probability is due to a hernation of the intervertebral disc in the cervical spine. At the present time I cannot give you the outcome of this case because of the nature of her injury. She remains under conservative treatment consisting of traction to her neck at home, and physiotherapy treatment.

SUMMARY:

The patient describes an accident which occurred March 1, 1954, at which time she was struck from behind by another car and suffered a so-called whiplash type injury.

She responded initially to conservative treatment with cervical traction. She was hospitalized for 10 days.

The diagnosis on initial examination was whiplash injury of the cervical spine — no fracture.

Three weeks later she began to have symptoms which now are suggestive of rupture of an intervertebral disc in the cervical spine. She is now receiving physiotherapy and further traction at home. Her prognosis is guarded. If she does not respond in another two weeks, consultation and myelographic x-rays will have to be made in order to confirm or refute the impression of a ruptured disc. Surgery might then have to be performed for relief of it. She should be re-evaluated in not less than another three weeks before arriving at any more definite prognosis for her.

Very truly yours,

M. D. SMITH, M.D.

EXHIBIT E:

April , 19

To Whom It May Concern:

Attn: John O'Brien

Re: Mrs. Mary Jones, Age 48

Mrs. Mary Jones of Tucson, Ariz., was examined in our office on April , 19 .

History — Mrs. Jones states that she was injured on March 1, 1954, when the car in which she was riding while stopped at a red light was struck from the rear by another car and she states "it snapped my neck." That same day she consulted her private physician, Dr. M. D. Smith of this city, and she states that she was placed in the hospital and stayed there for about 10 days. During this time, she had a very sore neck which improved somewhat; she was kept in traction and given some heat treatments.

In two or three weeks after she left the hospital, she began to notice, she states, pain which runs down the right arm, is made worse if she coughs or sneezes, and she states she frequently drops a glass or a plate if she holds it in her hand. She is again under the care of her family physician and she states that she is getting some of this same kind of traction at home which she in the beginning received as a patient in the hospital. She states that she has constant headaches, that she doesn't sleep well, that she takes aspirin without relief. She states that she cannot return to her job as a receptionist because of the headaches and pain in the right arm.

Physical Examination — This is a well developed, well nourished, extremely active, white female, who does not appear to be in acute distress at the time of this examination.

The examination of the head and neck shows a normal contour of the head with a full head of hair. The pupils of the eyes are round and equal and react briskly to light and accommodation. The nose is clear, the throat is normal, the tonsils are absent, the tongue is clean, the teeth are in good repair.

Examination of the neck shows no abnormal masses in the soft tissue. There is a full range of motion with rotation of the head to either side and on upper extension to the point where the patient is able to look fully at the ceiling and is able to place her chin to her chest in flexion. The patient says she has some discomfort along the left side of the neck on performing all these motions but more on the right. Firm pressure on the right side of the neck is not accompanied by any subjective complaints. No abnormal crepitus is felt in the neck during these motions.

Examination of the muscles of the shoulder girdle shows no evidence of atrophy of the right shoulder compared with the left. There is a full range of motion. The elbow joints and wrist joints of both upper extremities function normally. There is no evidence of muscle atrophy involving the muscles of the arm or forearm or hand. Measurements of the two upper extremities show them to be equal in circumference at their component levels. The reflexes over the right forearm and elbow are slightly hyperactive compared with their fellows on the left side. The patient described no subjective disturbance of sensation to pin prick over either hand or forearm. The patient makes no complaints relative to the chest, abdomen or lower extremities.

X-rays of the cervical spine were ordered with the following report: X-rays of the cervical spine taken in the anteroposterior, lateral and oblique projections show minimal hypertrophic changes between the fifth and sixth cervical segments. These changes consist of slight pointing of the vertebral bodies as seen in the lateral view, the intervertebral disc is narrowed between the fifth and sixth cervical segments very slightly. There is a very slight loss of the normal cervical curve. Conclusions from the x-ray examination are mild hypertrophic changes of the cervical spine between the fifth and sixth cervical vertebral bodies, questionable degeneration of an interposed disc and no evidence of fracture, recent or old.

SUMMARY:

The patient states that she received an injury of the type described about on March 1, 1954, which resulted in her having some pain principally in her neck. This was relieved by hospitalization under care of her private physician for a period of 10 days or so. She denies ever having had any trouble with her neck prior to the accident. The physical examination is essentially normal except the neck and right arm and forearm. There is evidence of a certain amount of cervical degenerative arthritis between the fifth and sixth cervical segments which must have been present for a considerable period of time. There is no evidence of fracture recent or old. She has some indefinite symptoms in the right hand suggestive of degeneration of the disc and mild compression on the nerve root which composes part of the cervical plexus and innervates the hand on the right side. She is still receiving treatment from her family physician but claims that she is not able to carry on her duties as a receptionist because of this disability of her hand.

It is my impression that she did suffer a mild whiplash type injury to the cervical spine or a sprain of it on March 1, 1954. This aggravated the pre-existing degenerative arthritis of her cervival spine and she now has some residual symptoms from both of these conditions, or rather aggravation of the arthritis.

One significant part of her past history which we neglected to mention heretofore was that Mrs. Jones states that about 18 months ago she was off work for a week or 10 days because of a neuralgia of her right arm. It is therefore our impression that her disability in this arm may be of a permanent nature, but that it will be considerably less in extent than she now complains of, and that it is an aggravation of her previously existing condition. We believe that her condition is not stationary but that she will gain some more improvement.

On the off-chance that she in reality now does have a ruptured intervertebral disc or a degenerated one, this patient should be re-examined in about one month in order to see what her progress has been during that time.

Very sincerely yours,

ROBERT MEDIC, M.D.

RM:ph

EXHIBIT F:

This is to certify that I, ..., authorize Dr. ..... to release information regarding my injuries as a result of an accident which occurred on..... ..... 19....., at

....., to my attorney .....

I hereby agree to pay all reasonable charges in connection with the preparation of such a report.

In the event that Dr.....is requested to appear in court or at a deposition in reference to my case for the purpose of rendering expert opinion, I agree payment of a rasonable fee for such purposes.

In connection with my agreement to remunerate Dr.....for reports or for treatments and expert opinion, I authorize my attorney, ..., to pay directly to Dr.....all reasonable charges made for these services out of any recovery or settlement made by me.

.....

DATE:.....

WITNESS:

.....

JOINT MEDICO-LEGAL PLAN FOR SCREENING MEDICAL MALPRACTICE CASES:

The fundamental purposes of this plan are two-fold; on the one hand, to prevent where possible the filing in court of actions against physicians and their employes for professional malpractice in situations where the facts do not permit at least a reasonable inference of malpractice; and, on the other hand, to make possible the fair and equitable disposition of such claims against physicians as are, or reasonably may be, well founded.

Both professional groups recognize that the mere filing of a malpractice action in court, however, unjustified medically it may be, causes substantial harm to the reputation and practice of the physician concerned. Both groups recognize, at the same time, that persons having legitimate and meritorious grievances against physicians have heretofore often encountered the greatest difficulty in substantiating their claims with expert testimony in court.

The instrumentality hereby jointly created for the purposes outlined above shall be known as the Joint Screening Panel of the Pima County Medical Society and the Pima County Bar Association, hereafter referred to as the Panel.

II. COMPOSITION OF THE PANEL:

The permanent Panel shall consist of all of the members of the medico-legal committees of the medical society and bar association; provided, however, that neither the society nor the association shall be represented by more than 10 members on the Panel. The Panel may, by a majority vote of its permanent members, call in one or more other physicians or attorneys to sit as members of the Panel in consideration of any particular case. Any permanent member of the Panel shall disqualify himself from consideration of any case with which, by virtue of his circumstances or official position, he has or may have any personal or official connection, or as to which he feels that his presence on the Panel is for any reason inappropriate, considering the purposes of the Panel.

III. CASES SUBMITTED:

Any attorney may submit a case for the consideration of the Panel by addressing a request, in writing, signed by both himself and his client, to the chairman of the medico-legal committee of the bar association. This letter request shall contain the following:

1. A brief statement of the facts of the case, showing the persons involved, the dates, and the circumstances, so far as they are known, of the alleged act or acts of malpractice.

2. A statement authorizing the Panel, through its chairman, to obtain access to all medical and hospital records and information pertaining to the incident and, for the purposes of its consideration of the matter only, waiving his client's privilege as to the contents of those records. Nothing in that statement shall in any way be construed as waiving that privilege for any other purpose or in any other context, in or out of court.

3. An agreement that the deliberations and discussions of the Panel and of any member of the Panel in its deliberation of the case will be confidential within the Panel and privileged as to any other person, and that no Panel member will be asked in any action to testify concerning the deliberations, discussion and internal proceedings of the Panel.

4. A request that the Panel consider the merits of the claim and render its report to him.

5. A statement that the attorney has read, understands and subscribes to the plan for screening medical malpractice cases and has advised his client thereof and that the client agrees to the submission of the facts pursuant to the plan.

Cases which the Panel will consider shall include all cases involving any alleged act of pro-

fessional negligence occurring in Pima County, Ariz., by a member of the society, his servants, agents, or employes.

IV. PROCEDURE BEFORE THE PANEL:

Requests for review submitted to the chairman of the medico-legal committee of the bar association shall be brought before the next regularly scheduled monthly meeting of the joint medico-legal committee of the medical society and the bar association. At that time, the joint committee, sitting as the permanent members of the Panel, shall determine what, if any, additional physicians or attorneys shall be called to sit in review of each case, and a date and time shall be set for the Panel's hearing of and consultation on each case. In no instance shall the date assigned be more than 48 days after the receipt by the chairman of the medico-legal committee of the bar association of the request for review. In any hearing of any case brought before the Panel for review, a quorum of the Panel for the purpose of deciding the issues submitted to it, shall consist of a majority of those permanent members of the Panel who have sat on all hearings of the issues.

At the time set for hearing of the case, the attorney submitting it for review shall be present and shall state his case, including a resume of the facts constituting alleged professional negligence which he is prepared to prove. The physician or physicians against whom the claim is brought may be present and may make a statement of his or their case. The monetary damages in any case, if there are any, shall not be subject to inquiry or discussion. The hearing will take the form of an informal discussion, and no official record shall be kept. When the parties present have been heard, the Panel may take the case under advisement or it may request that additional facts, records or other information be obtained and presented to it at a supplemental hearing, which shall be set for a date and time certain, not longer than 15 days from the date of the original hearing, unless the attorney bringing the matter for review shall, in writing, consent to a longer period. Any second hearing shall be held in the same manner as the original hearing, and the attorney and physician concerned may be present.

Each case shall be taken under advisement by the Panel which shall consider all of the relevant material made available to it at the hearings or otherwise, in the form of statements or records. The Panel shall consider only whether, in the light of the material presented, there is a reasonable possibility that the acts complained of constitute professional negligence, and whether there is a reasonable medical probability that the claimant was injured thereby. The Panel shall make no effort to resolve disputed questions of fact except to determine whether, in its judgment, there is any substantial evidence to support the facts alleged by the claimant. The Panel shall make no findings respecting the quantum of damages in the case, if any there are.

The Panel shall not make any effort to settle or compromise any claim, or express any opinion on the monetary value of any claim. All votes of the Panel on any such question before it will be by secret ballot. All decisions shall be taken by a majority vote of those permanent members of the Panel present who have sat on all hearings of the issue.

Its answers to these questions shall be submitted in writing, to the attorney bringing the matter for review, and, if he or his representative has appeared before it, the physician concerned. A copy of each report shall be retained in the permanent files of the Panel. The deliberations of the Panel shall be and remain secret. The written opinion shall in every case be signed for the Panel by its elected chairman, and shall contain only the conclusions reached by a majority of its members, except that any Panel members may request in writing that his dissent from the conclusions of the Panel be noted in the official records of the Panel, and may, at his election, append to the written report submitted to the parties concerned his own written dissenting opinion. The opinion reached in any case shall be treated in every respect as confidential between the Panel and its members on the one hand and the persons directly concerned in the case on the other.

In any case where the Panel has determined that the acts complained of were or reasonably might be professional negligence, and that the claimant was or reasonably may have been injured thereby, the Panel, its members and the medical society will co-operate fully with the claimant in retaining a physician or physicians qualified in the field of medicine involved, who will consult with and testify on behalf of the claimant, upon his payment of a reasonable fee, to the same effect as if the said physician or

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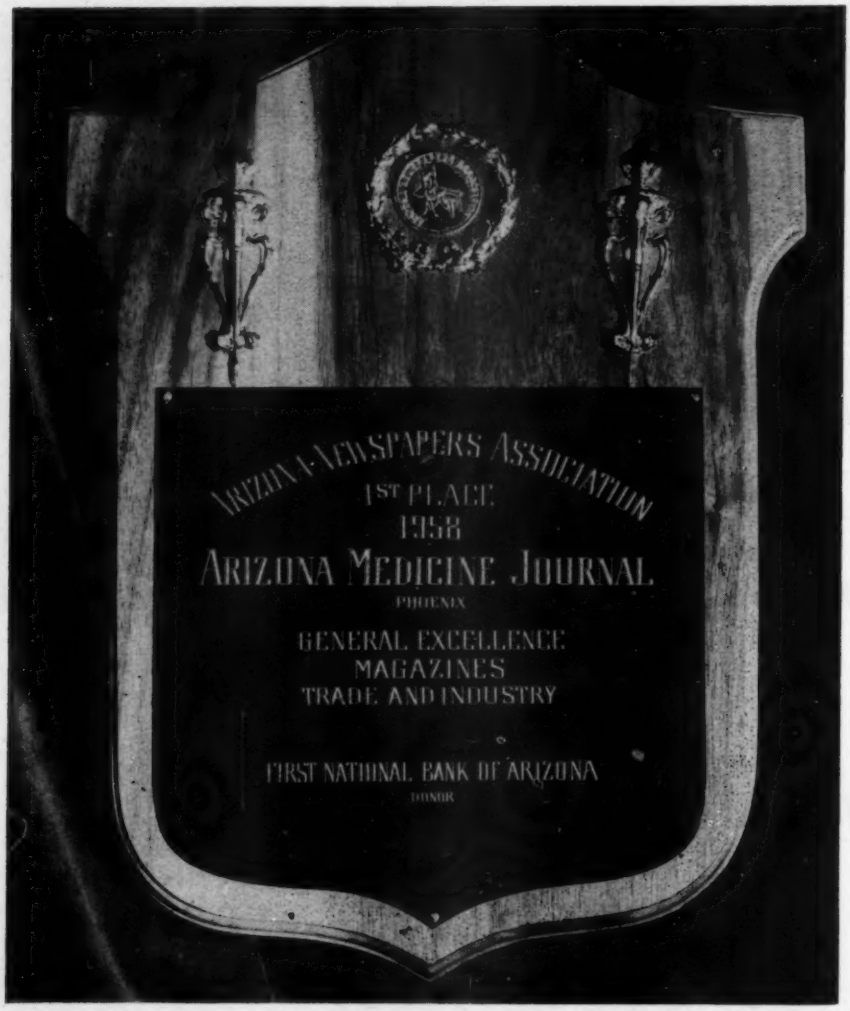
1. Editorial: New England J. Med. 258:48, 1958.
2. Vinnicombe, J.: Antibiotic Med. & Clin. Ther. 5:474, 1958.
3. Sheth, U. K., et al.: Ibid., p. 604, 1958.

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, N. Y.

*Reg. U.S. Pat. Off.

physicians had been employed originally by the claimant. In a case where the Panel has determined that there is no reasonable possibility that the acts complained of constituted professional negligence and/or no reasonable medical probability that the claimant was injured thereby, the attorney bringing the matter for review shall thereafter refrain from filing any court action based upon it unless personally satisfied that strong and overriding reasons compel such action to be taken in the interest of his client, and that it is not done to harass or gain unfair advantage in negotiation for settlement. It is not intended that the submission of any case to the Panel shall be considered as a waiver by the attorney or his client of their ultimate right to decide for themselves whether the case shall be filed. However, any attorney who brings a case before the Panel shall weigh its conclusions in the greatest professional good faith.

JOINT SCREENING PANEL of the
PIMA COUNTY MEDICAL SOCIETY
and the
PIMA COUNTY BAR ASSOCIATION



Arizona Medicine for the second consecutive year was awarded First Prize for General Excellence at the Annual Contest of the Arizona Newspapers Association. The plaque was presented to Mr. J. N. McMeekin, Business Manager of Arizona Medicine by Mr. Geo. Christy of the First National Bank of Arizona.

Until the discovery of DECADRON* by MERCK SHARP & DOHME, when your diabetic patients were also in need of corticosteroid treatment, you were often faced with a difficult therapeutic dilemma. Diabetes mellitus was a recognized contraindication to the use of corticosteroids, since they not only aggravated the existing diabetic symptoms, but often precipitated latent diabetes.

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ARIZONA POISONING CONTROL INFORMATION CENTER

PHILODENDRON. DERMATITIS:

SOME species of the popular house plant, *Philodendron,* have been found to cause skin eruptions according to a recent article in the AMA Archives of Dermatology.(1) Twelve cases of erythemato-vesicular rash, resembling poison ivy or poison oak of the hands and arms were patch-traced to *Philodendron cordatum* (heart shaped) and several related species of the family *Araceae.*

A five-year mystery was solved when the itchy fingers of a seed company's secretary were found to have tended the office vines. In another case, a building inspector's rashes were traced to the current *Philodendron* vogue in office buildings.

ACCIDENTAL POISONING CASE INVOLVING AN ALKYL QUARTERNARY AMMONIUM COMPOUND

A Tucson physician has reported to the Arizona Poisoning Control Information Center a case of accidental poisoning involving the germicide, "Double S Saniside." The active constituent of this preparation is N-alkyl-(C_{14},C_{12},C_{16}) dimethyl benzyl ammonium chloride, a quaternary ammonium compound, present in the above product in a concentration of 10 per cent. It is known that concentrated solutions of a quaternary ammonium detergent are strongly irritant to the mucous membranes as well as to the skin(2).

A young male adult accidentally took into his mouth about 30 ml. of the "Double S Saniside" disinfectant, but rapidly ejected the substance. Three hours later he reported to the physician after experiencing respiratory difficulty. The physician found that the victim was suffering from a severe laryngeal edema. Upon admission to the hospital, Solu Cortef, 100 mg. was administered, IV. Additional 50 mg. doses of this corticosteroid were administered 1½ hours, 3 hours, 6 hours, and 10 hours after the initial dose. Cortisone suspension, 50 mg. was administered IM every 6 hours during the first day, every 8 hours during the second and third days and every 12 hours during the fourth and fifth days.

The result of this therapy was excellent. Ninety per cent of the laryngeal edema had disappeared within 12 hours after institution of corticosteroid therapy. It is thought that tracheotomy was avoided as a result of the effectiveness of this drug therapy.

POISON-ANTIDOTE CART

A movable, locked, poison-antidote cart designed to contain all the necessary therapeutic agents to handle accidental poisoning cases in the hospital emergency room has recently been described by Bidder and Sunshine(3). The authors claim that the availability of this cart permits emergency situations to be handled with promptness and dispatch, since all the drugs and equipment for the symptomatic treatment of poisoning emergencies are assembled and readily available. The cart also maintains reference toxicological textbooks. A mobile poison-antidote cart such as the one described by Bidder and Sunshine is now commercially available.

ACUTE GLUTETHIMIDE (DORIDEN) POISONING

Glutethimide (Doriden) has received wide clinical use as a bed-time sedative and hypnotic. Widespread use of this drug has been accompanied by an increasing number of poisoning incidents involving this agent – both accidental and intentional. The Arizona Poisoning Control Information Center has received at least 15 reports of glutethimide poisoning from the Arizona Hospital Treatment Centers during 1958.

A currently acceptable therapeutic philosophy for acute glutethimide intoxication, based on considerable experience, has been made available(4), and it is presented here to supplement the Doriden information card located in each of the Arizona Hospital Poisoning Control Treatment Center's files.

(a). Mild cases of glutethimide poisoning will have a normal blood pressure, deep tendon reflexes, and can be aroused by painful stimuli. The blood level will probably be in the range of 0.5 to 1.0 mg./100 ml.* Such patients can be treated with symptomatic therapy and patience. They will awaken after a period of prolonged sleep.

(b). Moderate cases may manifest hypotension, shallow or abdominal breathing, absent or

*Identification and quantitative determination of serum glutethimide can be carried out according to the method of Goldbaum, L.R. et al., as reported in Fed. Proc. 16:300 (1957). Details of this procedure are available at the Arizona Poisoning Control Information Center.

variable deep reflexes, and some plantar withdrawl. Pain response and corneal reflex should be present. The blood level will probably range from 1 to 3 mg./100 ml.* Treatment should include early lavage of the stomach, but the physician should desist immediately if apnea or respiratory irregularity occurs. The use of endotracheal suction and oxygen and pressor drugs for hypotension are valuable – care is necessary to avoid overhydration. Cerebral edema represents a major threat. One may titrate the patient with bemegride (Megimide) using 50 mg. increments every 10 to 15 minutes, and maintenance doses as needed to keep a "safe" state of anesthesia. It is well to be suspicious if more than 1,500 mg. of bemegride is required to lighten anesthesia. The bemegride should be stopped immediately if clonus or convulsions are produced.

(c). Severe cases will show hypotension, areflexia, deep coma, absent plantar withdrawal, and pain response. The blood level will probably be above 3.0 mg./100 ml.* Such patients should be titrated with bemgride immediately after taking a blood sample for determination of the glutethimide level. Other measures are instituted as one is able. Plans should be made for external hemodialysis with an artificial kidney on an emergency basis in the following conditions: (a) failure to elicit light reflex or plantar withdrawal, (b) a bemegride requirement greater than 1,500 mg. on titration, (c) convulsions from bemegride, (d) later deterioration of clinical state.

ARIZONA STATE DEPARTMENT OF HEALTH – ARIZONA POISONING CONTROL MEETING

A joint meeting of officials of the Arizona State Department of Health and consultants of the Arizona Poisoning Control Information Center was held in the State Health Department Building, Phoenix, Dec. 3, 1958. This meeting, which was arranged by John H. Nelson, acting director of the division of health education, included a showing of the new motion picture film, "One Day's Poison." The film presents the operation of a poison control center and relates the dramatic events in one case of accidental poisoning.

The operation of the statewide Arizona Poisoning Control system was presented at this meeting. The matter of reporting accidental poisoning cases to the Arizona Poisoning Control Information Center was discussed. The division of health education of the state department of health offered assistance in the Arizona Poisoning control program involving public education with a view toward preventing accidental poisoning.

Officials of the state health department attending this meeting were: John H. Nelson; George W. Marx, director, bureau of sanition; Gregory Bujewski, sanitary engineer; Jefferson I. Brown, director, division of public health nursing; Harriett K. Beck, Ph.D., director, division of mental health; Virgil V. Shoop, mental health consultant in social work; Helen Boyle, psychiatric social worker; H. G. Crecelius, Ph.D., director, division of laboratories; Charlotte Silva, senior chemist; Melvin R. Wise, director, bureau of vital statistics; Frank R. Williams, director, local health administration; Jane H. Rider, director, hospital surgery planning & construction; Clarence Horton, assistant director, hospital survey planning & construction. Consultants from the University of Arizona Poisoning Control Information Center attending the meeting were: Willis R. Brewer, Ph.D.; Albert L. Picchioni, Ph.D.; Lloyd E. Burton, M.S.

TREATMENT OF POISONOUS SNAKE BITES

It is of interest to note that a revised instruction circular for the treatment of pit viper venom poisoning is now supplied with each package of Antivenin (Crotalidae) Polyvalent. (North and South American antisnakebite serum.) The use of the antivenin remains essentially unchanged, but all reference to the use of incisions at the site of the fang punctures and areas of swelling, and application of suction has been deleted from the new instructions. In a recent report in the literature(5), the author states "the instructions for treatment of snake envenomation included in the antivenin package as now supplied have been revised to conform to present clinical thinking and have been officially approved. Neurtalization of the venom with antivenin in adequate dosage is the only measure recommended." The report also points out that the direction circular contains a condensed account of the evidence on the basis

*Identification and quantitive determination of serum glutethimide can be carried out according to the method of Goldbaum, L. R. et al., as reported in Fed. Proc. 16:300 (1957). Details of this procedure are available at the Arizona Poisoning Control Information Center.

of which chilling, by chemical or other means, is interdicted as a form of treatment.

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2. Gleason, M. N., Gosselin, R. E., and Hodge, H. C., "Clinical Toxicology of Commercial Products," pg. 171, the Williams and Wilkins Co., Baltimore, 1957.
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4. Schreiner, G. E., Berman, E. G., Kovach, R., and Bloomer, H. A., AMA Arch. Int. Med. 101:899 (1958).
5. Buckley, E., JAMA, 169:96 (1959).

STATISTICS OF 97 POISON CASES REPORTED DURING DECEMBER 1958

	Per Cent	*Number*
Age:		
Under five years	63.9	(63)
Six to 15 years	5.2	(5)
16 to 30 years	18.5	(18)
31 to 45 years	10.3	(10)
Over 45 years	0.0	(0)
Age not reported	2.1	(2)
Nature of Incident:		
Accidental	84.6	(82)
Intentional	14.4	(14)
Nature of incident not reported	1.0	(1)
Outcome:		
Recovery	99.0	(96)
Fatal	1.0	(1)
Time of Day:		
Between 6 a.m. and noon	24.7	(24)
Between noon and 6 p.m.	27.8	(27)
Between 6 p.m. and midnight	22.7	(22)
Between midnight and 6 a.m.	8.3	(8)
Time of day not reported	16.5	(16)
Causative Agents:		
Aspirin preparations	24.7	(24)
Sedatives (barbiturates, glutethimide, meprobamate)	14.4	(14)
Other medication (quinine, boric acid, camphorated oil, thyroid, Darvon, Exlax, Midol, Numzit, Chlortrimeton, etc.)	24.7	(24)
Insecticides (Real Kill, lindane, parathion, chlordane, dieldrin)	6.2	(6)
Food poisoning	5.2	(5)
Poisonous gases (carbon monoxide, natural gas)	5.2	(5)
Household cleansers & disinfectants, (Purex, Windex, Drano, Double S Saniside, furniture polish*)	5.2	(5)
Solvents (gasoline, kerosene)	2.1	(2)
Mothballs	2.1	(2)
Miscellaneous (hair tint, book matches, water softener tablets, cigarets, etc.)	10.2	(10)

*Furniture polish poisoning involved a 16-month-old boy and was fatal.

WILLIS R. BREWER,
Dean,
College of Pharmacy

ALBERT L. PICCHIONI,
Pharmacologist,

LINCOLN CHIN,
Pharmacologist,

Consultants to the Poisoning Control Committee, Arizona Medical Association

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References: 1. Finkelstein, Murray: Journal of Pharmacology and Experimental Therapeutics, in press. 2. Winkelstein, Asher: Paper in preparation.
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REFRACTORY CASES RESPOND

"ARE WE MAKING THE SAME MISTAKES BRITISH DOCTORS MADE?"

THE FOLLOWING is an except from the California GP, June 1958 issue.

"Almost every doctor who visits England comes back wanting to write an article or give a speech about socialized medicine. Because there has been so much said so many times on the subject, it has lost much of its interest.

Yet the Academy of General Practice headquarters in San Francisco recently had a visitor from England who had some startling, frightening things to say of interest to *every* American doctor.

The visitor was Dr. Alastair J. Marshall, Luton, England, who is visiting in this country under a Ford Foundation grant. As an area executive in the British Medical Association, and on the executive area council (one-third doctors, two-thirds laymen) for the national health system, Dr. Marshall can competently speak on the subject. Here are some of the questions presented to Dr. Marshall by the academy's executive secretary, Bill Rogers.

Q: Did the doctors try to get together to present a united front against socializations?

A: Indeed they did. The British Medical Association polled the doctors and stated the act was completely unacceptable. In an initial poll, only 17 per cent indicated they might favor or go along with the national health act.

Q: When the government was faced with the prospect that 83 per cent weren't going to participate, what did it do?

A: They shot back at the BMA saying they proposed to go ahead with the 17 per cent who would participate. They pointed out to the negotiators that the first people signing up would be given immediate seniority, that pensionable rights would be from that day. But the thing that really bulldozed the doctors was that during a very limited time period, the government offered to buy the goodwill of the practices of doctors who would sign up. When they repolled the doctors after this was announced, 47 per cent said they would sign up.

Q: Do you have any idea how many of the doctors are specialists in England?

A: About one-seventh or one-eighth are specialists.

Q: Has nationalization had any effect upon the number of doctors entering general practice or the specialities?

A: Initially there was a rush of people into specialty ranks because it appeared they were going to do considerably better. Now, everything is in a state of confusion. These young people having spent as many as 10 years as registrars, (they work in hospitals as residents at a very low salary) find there are no jobs available. Many of them would like to get into general practice but find that general practitioners aren't anxious to have them, either. The internists have the biggest problem.

Q: The average GP in this country does obstetrics, pediatrics, common surgery and medicine. How does this compare with the GP in England?

A: Well, we do no surgery at all — the specialists have succeeded in seeing that no general practitioner has access to any hospital. The people are now conditioned to expecting specialist surgery. We do obstetrics. Most of it. That's not because the government thinks it's a good idea, but there have been no hospitals built, and there are no places to put these people. We know their intention is to take obstetrics away from us, too, once they get hospitals built.

Q: How many GPs had hospital privileges before the government took over?

A: Many.

Q: I've heard you have a bed shortage. Do you agree?

A: Yes! Our patients expect to wait two years for the removal of tonsils, two or three years for a chronic appendix; they will certainly wait that long for a gall bladder or a gastrectomy. Emergency surgery is done just as it was before, when it is needed.

Q: You would think this would produce a lot of private work.

A: True, but it is mostly in the consultative field.

Q: Do you think socialization was forced mostly by the labor government?

A: No. They brought it in, but it was a coalition government that started the program. Winston Churchill himself welcomed the advent of national health service.

Q: How have drug manufacturers fared under socialization?

A: Initially, very well. Now they are doing more of a hard sell. The first few years it was

wide open and anybody could prescribe anything he liked. As soon as costs rocketed, the government made restrictions. Now doctors are very wary about prescribing new products since the doctors may end up having to pay for the drug themselves. The drug companies must enter into price agreements. In fact, we get directives not to use certain drugs because the companies have not entered into agreement.

Q: How many patients a day do you see now – how many were you seeing before?

A: Because of my commitments, I have a full list and have 3,600 patients. Any patients above that I'm not paid for. Sometimes I'm forced to take on new patients, such as when twins are born to a family and if I'm a friend of theirs and want them to remain as my patients. I get in my office around 8:30 in the morning and will work until noon and will see 40 to 50 patients. I'll certainly see 50 to 60 in the evening. I'll have 20 to 30 home visits. This makes a total of about 120 to 140 a day. In the old days, I used to see around 35.

Q: What's the basis of your payment?

A: I'm paid solely on the basis of number of patients on my list, not the amount of work I do. Besides this, we're paid 65 cents for series of immunizations and we receive a delivery fee of $21. There is nothing else we get paid for.

Q: If the government doesn't like the way you practice, what can they do about it?

A: They can fine you after a warning. They'll do this if a patient complains you were rude, wouldn't make a house call, or if the government inspectors don't find your office up to par. They will also fine you for prescribing a drug which is not approved by them.

Q: Are hypochondriacs a problem?

A: They're a dreadful problem. We're knee-deep in them. The national health system has increased the neurotics considerably.

Q: Why don't you refer some of these patients to a psychiatrist?

A: It's almost impossible to find one. Especially one who's sane enough to be able to go to his clinic. The psychiatrists are few and far between.

Q: But you can dismiss patients can't you?

A: Yes, but I have to consider my pocketbook, family – and reputation.

Q: Do you think the majority of the public is satisfied?

A: This is difficult to assess because of the conditioning everybody had with emergency service during the war. I don't think they are satisfied or dissatisfied. The majority just don't seem to care.

Q: Under such a plan as this, people are getting more medical care than ever before. If you discount what it's costing, do you think they're getting better care than prior to 1948?

A: Oh, no. The over-all care probably is better because of those who couldn't afford any kind of care before. But almost every doctor will admit that the quality of his work has deteriorated, simply because of the mass of people that seek medical advice even for the most trivial complaints.

Q: What effect has this had on medical education?

A: Well, the government was smart. When the national health act first came in, they also brought in an education act which made it easier for anyone to go into medicine. In the last two years it had become very apparent this lovely "springtime" has fallen flat. Now there is a falling off of people going into medicine. I would certainly not advise my son to go into medicine today.

Q: Where do you feel you British doctors made your biggest mistake in letting the government take over?

A: We were not unified and simply didn't stand firm against the government. Our lines were broken here, there, and everywhere. We all feel the government would never have gone ahead with this system if we had any unification within our ranks. But ours being an individualistic profession, everybody had ideas of his own, and you never could get three people to agree with each other.

Q: How effective has the BMA been in getting reforms and improvements?

A: Rather ineffective. The trouble is it's always approached the government completely on ethical lines. Now about 80 per cent of the doctors belong to what we call a "guild." I suppose that you would call it a union, but we don't like that term for a professional group. Because of its charter, the BMA is not allowed to participate in politics, and that's the reason we had to form the guild. The BMA could have been much more effective if it had the power we have given to this British Medical Guild.

Q: How does the guild work?

A: It really hasn't had an opportunity to

work yet. Each doctor, however, has signed a firm pledge that he will abide by the actions of the guild. If doctors are going to let each other down, then we might as well forget about the whole thing. If the guild should ask its members to resign in any given area, it will upset the entire national health plan and will be a very strong bargaining force. We'd continue to see our patients, of course, at a very low fee, but would refuse to do any of the paper work. The doctors in the rest of the country would be contributing to the general fund of the guild to help support the doctors who won't be receiving anything from the national health fund. We have just about discovered the only way to fight a government is through trade union rules.

Q: Like England, there are a few doctors in this country who would not oppose government control in medicine. What advice would you give to the majority who want to see freedom in medical practice maintained?

A: I only wish that the AMA could finance a tour to send those doctors (who would favor a national health service) to England. Idealistically, it's a wonderful thing that everybody can have free medical care and attention. But in practice, it just doesn't work. The cost has rocketed about three times what it was thought the maximum costs would be. The government obviously didn't realize so many people would take advantage of it, and take advantage of it so often.

Q: What would you guess the gross annual income is for a general practitioner?

A: As a single practitioner his gross would probably be between $8,000 to $10,000 a year. Out of this he would have to pay for his office, equipment, care, his secretary, utilities and tax which would bring him down to a net of $5,000 to $6,000 a year. In a group a doctor can do better, since you share expenses.

Q: What about the incomes of specialists?

A: From the government most of them get, depending on the amount of hours they put in, around $10,000 a year. This gives them quite a bit of free time for consultative practice, so they can do much better. Oddly enough, they get the same income no matter what their specialty is. The eminent brain surgeon will receive just as much as a dermatologist. Internists have the biggest problem, since there are many more of them than there are positions open. Those working in the hospitals waiting for a consultative post to open (some have now been waiting 10 years) make around $5,000 a year.

Q: From your own personal travels in this country, do you feel we are following in your footsteps?

A: Unfortunately, yes. I feel the same pattern is reproducing itself here. And what is more, I have seen very little evidence of your profiting by our mistakes. There is a similarity in the way governments work, and you could learn much from our example.

Q: I know you are acquainted with our Forand bill. From your experience, how do you think American doctors should approach this type of legislation?

A: If American doctors don't feel this is the best type of medicine for their patients, they should oppose it now. But you can't do this unless you're unified – and you are *not* unified. If you Americans benefit from our experience, you'll remember the words of your own Ben Franklin: "We must all hang together, or assuredly we shall all hang separately."

Q:What is your hope for the future as far as England is concerned?

A: I think it's more than a hope. Within the next two years there will have to be considerable modification, or we will quit. Having had 10 years of this, we are much more united now than we were in 1948. At this very moment, the government and the medical profession have reached a deadlock. We were on the verge of a walkout when the government set up a royal commission (an independent body of prominent lay citizens) to reappraise the entire program. We are now waiting for the report of the commission to see what we'll do.

Q: Do you think most British doctors would share the views you've just expressed?

A: Definitely. I prepared a talk expressing most of these views before I left. To get reactions, I showed a copy to both a conservative and then to a very socialistic minded doctor. Both agreed with *everything* I said. But this was what was interesting. The conservative added: "If you have any influence on American doctors, you will be moving them along toward socialism." While the Socialist exclaimed: "If American doctors should really take to heart what you've said, socialization of medicine in the United States could be set back 50 years."

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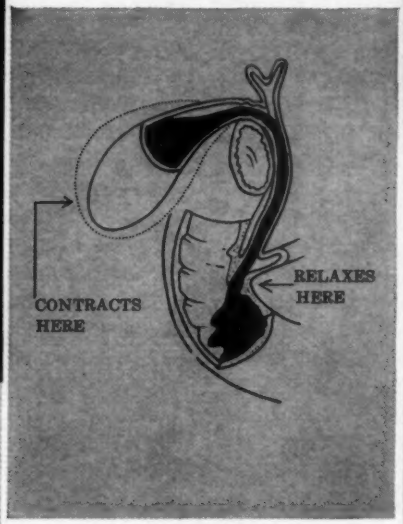

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STATE OF ARIZONA
HOUSE OF REPRESENTATIVES
24TH LEGISLATURE
FIRST REGULAR SESSION

A CONCURRENT RESOLUTION

Introduced by Nelson D. Brayton, M.D.

Creating a Joint State and House Committee for the Purpose of Studying the Problems Involved in the Establishment of a College of Medicine and Surgery in the State of Arizona.

THE State of Arizona, during the past decade, has experienced a tremendous economic and population growth and reliable statisticians reveal that this economic and population growth will continue at an undiminished pace. It has been estimated that the State of Arizona will have a population of over 2 million persons by the year 1975.

In order to meet this population growth, many social and business services must be continually expanded. The problem of graduating enough competent doctors of medicine and surgery to serve the people of the United States has been, and is, a grave problem.

A medical college within the State of Arizona can and should be established in the state within the next 10 years in order that the State of Arizona may have sufficient doctors of medicine and surgery to take care of the needs of our growing population. Therefore

Be it resolved by the House of Representatives of the State of Arizona, the senate concurring:

1. That a joint committee of the house of representatives and the senate be appointed, consisting of three members from each house to be selected by the speaker of the house of representatives and the president of the senate, respectively. The committee shall name one member as the chairman.

2. That the committee shall conduct a survey and study all other tasks incident thereto, for the purpose of determining the feasibility of establishing a college of medicine and surgery within the State of Arizona during the next 10 years.

3. The sum of $10,000 shall be available to the committee for the purpose of conducting this study. The sum so appropriated shall be furnished equally from the sums appropriated to the senate and the house of representatives in Chapter 102, Section 1, Subdivision 95, Laws of 1958.

4. That the committee report shall be presented to the 24th legislature before Jan. 20, 1960.

FEDERAL ACTION RELATED TO MEDICINE

MEDICARE CONTRACTS TO BE RE-NEGOTIATED BY MAIL

BECAUSE a "comprehensive examination and analysis" was made of fee schedules last year, and administrative costs no longer are an issue, this year's Medicare contracts will be re-negotiated by mail. Changes were worked out at a series of conferences. As in the past, extensions will be for one year.

In making the announcement, Brig. Gen. Floyd L. Wergeland, head of Medicare for the defense department, said contractors for physicians in all states had been informed of details. They will be supplied copies of changes the department proposes in the contracts 45 to 60 days prior to expiration dates. If the department's modifications are acceptable, states are to execute the contracts and mail them beck. If the changes are not acceptable, contractors are to contact the military contracting officer at once so differences can be resolved.

There is no problem in hospital contracts, inasmuch as there are only two contractors, Mutual of Omaha, and Blue Cross.

DEMOCRATIC COUNCIL FAVORS FORAND: CONGRESS ATTITUDE UNKNOWN.

The Democratic advisory council, composed of party leaders mostly from outside congress, favors a hospital-nursing home care program under social security, but there is no evidence that the top Democrats in congress will go along with the idea. The council recommended the step in a comprehensive manifesto, adopted at a Washington meeting to evaluate voter trends in the November election and chart a suggested course for the 86th congress.

Hardly had the document been released, when House Speaker Rayburn and Senate Leader Johnson let it be known that Democrats in congress would formulate their own legislative program, and that it might not be a close parallel to the council's report.

Prominent in council discussions were Ex-President Truman and Adlai Stevenson, twice

(1952 and 1956) defeated as Democratic presidential candidate. Presiding at the session was the Democratic national chairman, Paul Butler. Present also were a number of governors and national committeemen. The council was formed two years ago. Originally 10 members of the senate and house were appointed to the 20-man group, but with few exceptions, they have either declined or been generally inactive.

To "insure a secure life for our people," the council proposes that social security taxes be increased by one quarter of 1 per cent for employer and employe, and three-eighths of 1 per cent for the self-employed, with the money used to finance between 20 and 60 days of hospital care and "a limited amount" of nursing home care for the aged and other social security beneficiaries.

The council also would eliminate the age 50 limitation on disability payments, as "a disabled person is disabled whether he is 25, 40, or 50 years old." Also, it would have benefits increased 20 per cent within the next three or four years, widows' benefits boosted, and the earnings ceiling for OASI taxes moved up from $4,800 to $7,200 within two years.

In other health areas, the council urged more appropriations for hospital construction and "a steady effort" to increase funds for medical research.

FDA PUBLISHES LIST OF APPROVED FOOD ADDITIVES.

The Federal Register for Dec. 9 carried a long list of chemicals and other additives approved by the Food and Drug Administration, along with proposed regulations governing the new food additives law passed by the last congress. FDA also has cleared a new microbial pesticide, *bacillus thuringiensis Berliner*, for use against crop insect pests. It will be applied as a dust or spray. Before clearing the pesticide, FDA required the manufacturer to produce scientific testing data showing that the substance would not be a hazard to health. It was demonstrated that the pesticide's micro-organisms are not pathogenic to warm-blooded animals, and human volunteers ate and inhaled it without ill effects. FDA points out that in the past, milky disease bacteria have been widely used for control of the Japanese beetle, but they have been applid only to the soil, and not directly to crops.

In making the announcement, Commissioner George Larrick of FDA said: "The development of new safe pesticides to protect our food supply contributes to progress both in agriculture and in public health. . . ."

BURNEY CALLS FOR INTENSIVE DRIVE TO PROMOTE POLIO VACCINATIONS

Following a Washington meeting of 30 medical leaders to discuss the poliomyelitis situation, and an evaluation of the disease incidence in 1958, Surgeon General Burney has called for a revival of the vaccination campaign, particularly pointed toward children under five years of age.

"It is a tragic circumstance," he said, "that hundreds of children and young adults will be spending the balance of their lives in wheelchairs or on crutches because of a failure to be vaccinated."

The conference, attended by officials from national medical groups, voluntary health organizations and state and local health departments, cited as "an important step forward," the resolution unanimously adopted by the American Medical Association's house of delegates at its recent meeting in Minneapolis. The delegates recommended that:

1. Each physician assume responsibility for making sure that all members of families he sees are fully vaccinated.

2. State medical societies work with state health departments to bring county and local medical societies together with health departments to work out vaccination programs.

3. County medical societies meet with local health departments to make surveys of local problems and devise ways to meet local situations.

The conference was told that in 1958 there was more paralytic polio in the United States than in 1957, although less than in any other year in the last 15; attack rates were highest in 1-year-olds, and more than 50 per cent of the paralytic cases were under five years; the vaccine continues to show a high rate of effectiveness (about 87 per cent), and duration of immunity is "holding up well." Evidence indicates it continues to be effective among persons vaccinated more than three years ago.

While most campaign work will have to be

done locally, PHS will continue to aid in epidemics, study the national problem and conduct publicity and education campaigns.

"Now we have to finish the job," Dr. Edgar Martmer of the American Medical Association declared. He pointed out that what has been so far "has been one of the most successful health campaigns of recent years."

The conference agreed that "face to face" campaigns will have to be conducted under sponsorship of local groups to reach the "hard-to-get" segment of the population, in many areas identified as low-income families. City and county medical societies were urged to examine local situations to pinpoint factors that have interfered with the vaccination campaigns so far. It was emphasized that from now on, campaigns will have to be on a block-by-block, home-by-home basis to be effective.

In addition to the efforts of the American Medical Association, the National Foundation and the PHS and others, the Advertising Council, Inc., will initiate another campaign starting in March, using national and local mass media.

Participating in the meeting, in addition to the groups mentioned, were the American Academy of General Practice, the American Academy of Pediatrics, the Pharmaceutical Manufacturers Association and the National Health Council.

MEDICAL SCHOOL CONSULTANTS ACTIVE: FLEMMING WANTS MORE DATA

A recently-appointed consultants' committee to Surgeon General Burney on medical school problems already has two staff studies under way, on construction costs of the newer schools and on the financing of medical school operations. At its first meeting, the group named a steering committee to work with the staff between regular meetings. Composing it are Frank Bane, chairman of the 21-man consultant group; Dr. Edward L. Turner, American Medical Association; Dr. Ward Darley, Association of American Medical Colleges; Emory W. Morris, D.D.S., president of the W. K. Kellogg Foundation; and the Very Rev. Robert J. Slavin, president of Providence, R.I. College.

In another development, Secretary Flemming of the department of health, education and welfare, during one of a series of conferences with health and welfare leaders, indicated he may ask various voluntary health agencies for their views on medical education. He particularly wants to know what they consider to be "fair shares" of medical education costs to be met by federal, state and local governments and private groups and institutions.

Conference subjects included the need for attracting more and better young people to medical careers, in the face of competition from "space, rockets, and engineering"; the problem of drawing talented researchers into medicine at the college level, also in the face of scientific competition; and need for compiling a complete inventory of both government and private medical research in all its aspects. Surgeon General Burney said the latter task was beyond the capability of the public health service.

MANUFACTURERS WANT DELAY IN ADDITIVES CODE

Food manufacturers want the Food and Drug Administration to delay putting into effect its new code for control of additives, because of the complications involved. This was one of the developments at a meeting of food manufacturing, storage and distribution representatives, called by HEW Secretary Flemming for an airing of problems. Among other things, a number of industry spokesmen cautioned that some states are setting up their own standards in the additives fields, which might cause widespread confusion. They believe FDA is best qualified to police the industry, and would like to see states out of the picture. Other discussions brought out that the industry believes FDA hasn't enough personnel to properly carry out its obligations, that imported foods are not subject to the same strict standards as domestic, and therefore have a competitive advantage, and that mentioning a chemical additive on confectionery labels means nothing to the layman, and provokes endless inquiries from the public.

MISCELLANY

A group of health and research leaders, at a Washington meeting in which federal and state agencies participated, cautioned that growing emphasis in high schools on teaching of the sciences, mathematics and languages may wreck essential health programs. The meeting was called by the American Association of Health, Physical Education and Recreation. . . . President Eisenhower has given his approval to organization of a science information service under the National Science Foundation. Objective is to help co-ordinate the growing volume of scientific information published here and abroad so

it can be available to scientists. . . . A total of 384 faculty and senior postdoctoral fellowships, 21 of them in the medical sciences, has been awarded by National Science Foundation for the current fiscal year.

PHS reports that poliomyelitis cases for 1958 total 5,862 compared with 5,832 in 1957. Paralytic cases for 1958 are about 40 per cent above last year, 3,003 compared with 2,125. All totals still are running well below 1956.

Food and Drug Administration has ruled that no residue of the pesticide Aramite will be permitted on fruits and vegetables in interstate commerce. Reasons: There are indications the substance can cause cancer in dogs and cats. The new ruling sets a zero tolerance.

Dr. Albert H. Holland Jr., has resigned as medical director of FDA to join the medical advertising firm of Cortez C. Enloe, Inc. He served in the post five years.

Col. Earl C. Lowry, professional director, Office for Dependents Medical Care, has resigned his defense department post to become president of Iowa Medical Service.

AFL-CIO GROUP DRAFTS PLAN FOR U.S. EMPLOYE HEALTH INSURANCE

A new effort is being made by organized labor for enactment of a federal employe health insurance program, an issue that has been before congress for many years but that has never been resolved because the interests involved have not been able to agree. In general, the attitude of the congress has been to take no action in view of disagreement among those who would benefit and the organizations that would have to administer a program.

The AFL-CIO government employes' council, representing about half a million U.S. workers, is proposing the following:

1. Coverage would be open to all federal workers and their families and would continue in retirement, provided the individual maintained his premium payments.

2. The U.S. would pay for two-thirds of the basic insurance, up to a maximum contribution of $14 per month; the employe would pay the other third, and could obtain broader protection by paying the extra cost himself.

3. Employes would have a choice of basic insurance — commercial, Blue Cross and Blue Shield, employe union plans, etc., within certain limits.

4. The U.S. would meet the entire cost of catastrophic insurance, but to take advantage of this, the employe would have to have basic coverage. Depending on his income, the employe would have to pay between $100 and $300 after basic benefits ran out until catastrophic benefits began.

5. Catastrophic coverage would meet 75 per cent of the costs, once it came into operation.

So far there is no indication whether the plan has the approval of the carriers, or whether congressional leaders are anxious for early action on the question.

HEW REPORTS CANCER CHEMOTHERAPY PROGRAM IN FULL OPERATION

The public health service's "massive effort" to discover chemical compounds that will be effective and safe in the treatment of cancer is now in full scale operation, according to HEW Secretary Flemming. Hospitals, universities, research laboratories, industry and government are co-operating in the program which is being directed by the public health service through its cancer chemotherapy national service center. The program has been steadily expanded over the past five years with these results:

1. Over 40,000 compounds and other materials are being tested annually on more than a million mice to uncover chemicals with anti-cancer properties. So far, some 70,000 materials have been put through screening tests.

2. Between 400 and 600 materials a year are showing enough promise to be given further analysis, with tests on larger animals. Nine out of 10 materials are rejected in this process either as ineffective, or too toxic for human use.

3. About 40 materials a year are approved for clinical trials with human patients in about 150 co-operating hospitals in the U.S. Currently about 70 materials are undergoing clinical trials.

Comments Secretary Flemming: "So far, none of the drugs being tested has proved to be a cure for cancer. The only existing cures for cancer are through treatment by radiation or surgery. The surgeon general advises me, however, that some promising new compounds developed in the chemotherapy program are being tested against a variety of cancers."

FOUR MORE MEMBERS NAMED TO CONSULTANTS GROUP ON MEDICAL EDUCATION

The final four members of the surgeon gen-

eral's consultant group on medical education have been named by Dr. Leroy Burney. This brings the total to 21. The group has been asked to study and recommend methods of providing an adequate number of well-qualified physicians over the next 10 years. It held an organizing meeting Dec. 8, directed some staff studies and decided to meet again Feb. 19-20 in the department of health, education, and welfare.

The four additional members are Robert C. Anderson, Ph.D., director, Southern Regional Education Board; Alvin C. Eurich, Ph.D., vice president, Fund for the Advancement of Education; John G. Searle, president, G. D. Searle & Co.; and the Very Rev. Robert J. Slavin, president, Providence College.

SOCIAL SECURITY

In and out of government, interest continues to build up in problems of the aged, including payment for their hospital-medical care. Hearings were held on proposals (Forand bill) for financing hospital-surgical care of all social security beneficiaries, but the bill was not reported out of the house committee. It is conceded that the question will come up again in this congress.

RESEARCH ABROAD

A number of congressional leaders, including Senators Hubert Humphrey (D., Minn.) and Lister Hill (D., Ala.), are interested in having the U.S. stimulate more worldwide interest in medical research. Some of the proposals include an international medical year, more U.S. grants to foreign medical researchers, and an international medical research foundation, which would co-operate with World Health Organization. Discussion on many of these ideas is expected.

AID TO MEDICAL SCHOOLS

For several months, high officials of the department of health, education, and welfare have been discussing in public the problems of medical schools, particularly their finances. Recently Surgeon General Burney of the public health service appointed a committee to look into the medical school situation, and report back to him with recommendations as to the proper role of federal, state and local governments and private enterprise in supporting the schools. Legislation on the subject was before the last congress, and is certain to be re-introduced in the coming session. One of the issues is whether U.S. grants should be used to meet ordinary operating expenses of the schools, or only for construction and equipment.

DOCTOR DRAFT EXTENSION

The draft act, with its amendment for calling up physicians under age 35, is scheduled to expire next June 30. Congress will likely be asked by the defense department to extend the regular draft and the physician amendment. The defense department expects it will have to use the doctor draft, which hasn't been invoked in two years, to produce the physicians it will need next year.

KEOGH PENSION BILL

Efforts for passage of the Keogh bill, led by the American Thrift Assembly, will be renewed with the 86th congress. This legislation would grant the self-employed a tax status similar to that of corporation employes by allowing them to defer income tax payments on earnings placed in retirement plans. The bill easily passed the house last session, but lost out in the senate.

MEDICARE

Prospects are that the $72 million appropriated by congress for the military dependents' medical care program will be exhausted before the end of the fiscal year, June 30. If so, the defense department likely will go before congress and ask for a deficiency appropriation. This could open the door to discussion of the restrictions placed on Medicare by the last congress. Principal irritant is the requirement that many service families receive their medical care at military facilities, rather than from private hospitals and private physicians. Also, an advisory committee has proposed that a modified program of dental care be incorporated in Medicare.

BUDGET TO ASK SAME AMOUNT FOR RESEARCH

The Eisenhower budget for the next fiscal year will ask approximately the same amount for research at the National Institutes of Health as they have for the current year — $294 million. Secretary Flemming of HEW disclosed this at a news conference in which he talked mostly in general terms about the budget. He said total expenditures (new and carry-over funds) will be higher than in any other year.

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A Bibliography of Selected and Current (1957-58) References on Clinical Cancer Chemotherapy*

by

Drs. R. Lee Clark and W. Sutow

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CHEMOTHERAPEUTIC AGENTS WITH SELECTED AND CURRENT REFERENCES

Nitrogen mustard (mechlorethamine hydrochloride; HN2; mustargen; embichin) methyl bis-(beta-chloroethyl)amine hydrochloride – 9, 50, 58, 63, 89, 91, 96, 97, 99, 132.

Chlorambucil (CB-1348;leukeran) p-N-N-Di-Di-(2 chloroethyl)-p-aminophenylbutyric acid – 9, 17, 22, 23, 40, 50, 51, 57, 60, 76, 85, 98, 120, 133, 140, 165.

Nitromin (mitomen; nitro-lost; MBAO; N-oxide mustard) Methyl bis (beta chloroethyl) amine N-oxide hydrochloride – 9, 95.

Phenylalanine nitrogen mustard (Racemic form: sarcolysin; L-isomer: CB-3025; melphalan; PAM) p-Di-(2-chloroethyl)aminophenylalanine – 43, 78, 81, 122.

Novoembichin 2-chloropropyl-di-(2-chloroethyl)amine hydrochloride – 99.

Dopan 4-methyl-5-((bis-(beta-chloro-ethyl)-amino)) uracil – 86, 99.

SM-1 1, 2-bis (beta-chloroethylthio)ethane – 123.

Hemisulfur mustard (HMS; hemi-H) 2 chloro-2'-hydroxydiethel sulfide.

R-48 (erysan; chloronaftine; CB-1048) N, N-Di-(2-chloroethyl)-beta-naphthyl amine – 9, 131, 133.

BCM (degranol; mannitol nitrogen mustard; degranolchinoin) 1, 6-bis(2-chloroethylamino)-1, 6-deoxy-D-mannitol dihydrochloride – 142.

Chloroquine mustard 7-chloro-4-((4-bis(beta-chloroethyl)amino-1-methyl butyl amino)) quinoline – 90.

Triethylene melamine (TEM) 2, 4, 6-triethylenimino-S-triazine – 9, 17, 23, 38, 40, 41, 50, 58, 106, 129, 132, 134, 137, 140.

Triethylenephosphoramide (TEPA) – 9, 50, 162.

Triethylenethiophosphoramide (thio-TEPA; TSPA) – 9, 30, 31, 50, 55, 77, 100, 110, 121, 132, 137, 147, 162, 164, 165, 173, 174.

ODEPA N-3-oxapentamethylene-N' . N"-diethylene posphoramide – 37.

OPSPA (MSPA) N-3-oxapentamethylene-N', N"-diethylene thiophosphoramide – 109.

Myleran (busulfan; G. T. 41) 1, 4-dimethanesulfonoxybutane – 22, 23, 38, 40, 41, 50, 54, 70, 139, 154, 156, 171, 175.

Dimethyl myleran (CB-2348) – 42.

Nonane 1-9-dimethanesulfonoxynonane – 112.

Bayer E-39 2, 5-bis (1-aziridinyl)-3, 6-diproproxy-p-benzoquinoe – 47, 61, 128, 143.

Aminopterin 4-amino-pteroylglutamic acid – 3, 9, 50, 106.

Amethopterin (methotrexate) 4-amino-N^{10}-methylpteroylglutamic acid – 3, 9, 17, 23, 49, 50, 80, 82, 102, 103, 124, 149, 161, 170.

6-mercaptopurine (mercaptopurine; 6-MP; purinethol) – 3, 23, 26, 50, 65, 84, 105, 106, 124, 161.

6-chloropurine (6-CP) – 3, 50, 65, 66.

Thioguanine 2-amino-6-mercaptopurine – 50, 138.

8-azaguanine (guanazolo; azan) 2-amino-6-hydroxy-8-azopurine – 3- 9, 127.

5-fluorouracil (5-FU; RO 2-9757) – 53.

Actinomycin C (sanamycin C)--9, 69, 127, 157.

Actinomycin D–9, 17, 59, 116, 127, 152, 157, 158.

Azaserine (serynl; P-165) O-diazoacetyl-L-serine–3, 17, 23, 49, 50, 151, 152.

DON 6-diazo-5-oxo-L-norleucine–17, 50, 108.

Mitomycin–153, 166.

Urethane (urethan) Ethyl carbamate–9, 21, 22, 29, 38, 50, 93.

Demecolcin (demecolcine; colcemid, omain) Deacetylmethylcolchicine–9, 23, 62, 83, 101, 139.

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Journal of Bone and Joint Surgery (British Edition). Vol. 31B, 34B (1949, 1952) to date.

Journal of Clinical Endocrinology & Metabolism. Vol. 8-9, 11 (1948-1949, 1951) to date.

Journal of Clinical Investigation. Vol. 26-28, 30-34 (1947-1949, 1951-1955).

Journal of Laboratory & Clinical Medicine. Vol. 25 (1939) to date.

Journal of Laryngology. Vol. 67 (1953) to date.

Journal of Nervous & Mental Diseases. Vol. 105-110, 117 (1947-1949, 1953) to date.

Journal of Neurophysiology. Vol. 16 (1953) to date.

Journal of Periodontology. Vol. 25 (1954) to date.

Journal of Prosthetic Dentistry. Vol. 1 (1951) to date.

Journal of Psychiatric Social Work. Vol. 17-18, 21 (1948-1949, 1952).

Journal of Social Casework. Vol. 26-29 (1945-1948).

Journal of the American Dental Association. Vol. 38 (1949) to date.

Journal of the American Dietetic Association. Vol. 21 (1945) to date.

Journal of the American Medical Association. Vol. 114 (1940) to date.

Journal of Thoracic Surgery. Vol. 10-11, 13 (1940-1942, 1944) to date.

Journal of Urology. Vol. 45 (1941) to date.

Laryngoscope. Vol. 59 (1949) to date.

Medical Clinics of North America. Vol. 24 (1940) to date.

Metabolism. Vol. 1-3, 5 (1952-1954, 1956) to date.

Modern Hospitals. Vol. 72 (1949) to date.

Neurology. Vol. 1 (1951) to date.

New England Journal of Medicine. Vol. 238 (1948) to date.

Oral Surgery. Vol. 2 (1949) to date.

Plastic & Reconstructive Surgery. Vol. 4 (1949) to date.

Postgraduate Medicine. Vol. 5 (1949) to date.

Psychoanalytic Quarterly. Vol. 17, 19 (1948, 1950) to date.

Psychosomatic Medicine. Vol. 10 (1948) to date.

Public Health Reports. Vol. 67 (1952) to date.

Quarterly Journal of Studies on Alcohol. Vol. 14 (1953) to date.

Radiology. Vol. 36-41, 43 (1941-1943, 1944) to date.

Social Casework. Vol. 26-29, 31 (1945-1948, 1950) to date.

Social Service Review. Vol. 21 (1947) to date.

Social Work. Vol. 1 (1956) to date.

Surgical Clinics of North America. Vol. 21 (1941) to date.

Surgery. Vol. 21 (1947) to date.

Surgery, Gynecology & Obstetrics. Vol. 70-74, 76 (1940-1942, 1943) to date.

BOOK REVIEWS

ERYTHROBLASTOSIS FETALIS
by Fred H. Allen Jr., M.D. and Louis K. Diamond, M.D. 143 pages. Illustrated. (1958) Little, Brown. $4.

Here is a clear, concise presentation of the current status of erythroblastosis and the blood factors by which it is caused. The potentially responsible blood groups are listed, the pathogenesis is reviewed and considerable attention is directed to clinical diagnosis. Indications and techniques of exchange transfusion are well detailed. The authors are from Harvard Medical School.

Stacey's Medical Books, San Francisco, Calif.

A THERAPHY FOR ANXIETY TENSION REACTIONS
by Gerhard B. Haugen, M.D., Henry H. Dixon, M.D., and Herman A. Dickel, M.D. 110 pages. Illustrated. (1958) Macmillan. $3.50.

The authors, all of the Department of Psychiatry, University of Oregon, offer a common-sense approach to the therapy for anxiety tension reactions which does not involve long interviews or psychoanalysis. They found that training the chronically "nervous" patient to relax (using a modified Jacobson system) brings relief of both psychic and the somatic symptoms.

Stacey's Medical Books, San Francisco, Calif.

RESOLUTION ON VOLUNTARY HEALTH AGENCIES PASSED BY THE AMA HOUSE OF DELEGATES ON DEC. 4, 1958

WHEREAS, the House of Delegates of the American Medical Association in June 1958, adopted the following resolution:

"1. That the house of delegates reiterate its commendation and approval of the principle of voluntary health agencies.

"2. That it is the firm belief of the American Medical Association that these agencies should be free to conduct their own programs of research, public and professional education, and fund raising in their particular spheres of interest.

"3. That the house of delegates respectfully requests that the American Medical Research Foundation take no action which would endanger the constructive activities of the national voluntary health agencies.

"4. That the board of trustees continue actively in studies of these perplexing problems looking forward to their ultimate solution"; and

WHEREAS, there is nothing in this action that is critical of the United Fund, as the United Fund is not even mentioned; and

WHEREAS, this action has been interpreted by some as disapproving the inclusion of voluntary health agencies in the United Fund drives; therefore be it

RESOLVED, that the American Medical Association neither approves nor disapproves of the inclusion of voluntary health agencies in United Fund drives; and be it further

RESOLVED, that the board of trustees be requested to arrange a top-level conference with the voluntary health agencies, the United Funds, and other parties interested in the raising of funds for health causes, with the view of resolving these misinterpretations and other difficulties in this area.

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MEDICAL DIRECTOR
DUKE R. GASKINS, M. D.

February, 1959

Dear Doctor:

Re: Forand Bill

As you already know, Doctor, the American Medical Association has gone on record against the Forand Bill now in Congress. The backers of this legislation claim, in effect, that because people over 65 with Social Security cannot obtain adequate hospital insurance, they should be given federal financial aid for medical care. We believe, as you do, that this is an approach to Socialized Medicine.

I am proud to say that in Arizona this need for hospital and surgical insurance protection for our senior citizens is solved with the H.B.A. Golden Years Plan. Under this plan, enrollment is open to age 75, and this protection is non-cancellable and guaranteed renewable to age 80.

When people suggest we need government insurance for hospital and medical care of the aged, I suggest you use the H.B.A. Golden Years Plan as an example to help in your stand against the Forand Bill.

Very truly yours,

THE H.B.A. LIFE INSURANCE CO.

Duke R. Gaskins, M.D.

Duke R. Gaskins, M.D.
Medical Director

DRG:rr

AMERICAN CANCER SOCIETY

COMMITTEE FOR A FAIR TEST OF
KREBIOZEN, INC.
343 South Dearborn Street
Chicago 4, Ill.
Nov. 14, 1958

WEbster 9-3960

John M. Davis, President
Francis Malan, Vice President
Z. L. Ross, Vice President
R. M. Cahill, Treasurer
Myra Rudeen, Secretary

Dr. Harold S. Diehl
Senior Vice President for Research and
Medical Affairs
American Cancer Society, Inc.
521 West 57th Street
New York 19, N. Y.

Dear Dr. Diehl:

THE refusal of the board of directors of the American Cancer Society to grant the request of the Krebiozen Research Foundation, made Feb. 10, 1958, to test Krebiozen has again further incensed the public against the intrigues of the medical profession and organizations which are using the public's money, apparently not to further cancer research, but to retard it.

We are receiving hundreds of letters written by the suffering public from all over the nation demanding something be done to correct this heinous situation. They are writing their congressmen demanding action – copies of these letters are mailed to us and, in turn, mailed to Senator Douglas.

It is not necessary for us to answer the three flimsy excuses given for not testing the drug. The public has already done this through the press and in letters now in your hands (and copies in ours).

In the past we mailed our petitions, requesting the test, to you, with a copy of each to Senator Douglas. In the future, these petitions will be given to Senator Douglas only, as apparently 21,500 signatures were something to be ignored by the American Cancer Society.

Your refusal has resulted in a greatly increased number of petitions received daily, and an increased determination on the part of the public to see this thing through. Should we follow the demands of the public, these petitions would be changed to a demand for a congressional investigation of the American Cancer Society and the AMA. If this proves to be necessary, it will be done.

And again, "TRUTH WILL NOT BE BURIED."

Sincerely yours,
COMMITTEE FOR A FAIR TEST OF
KREBIOZEN, INC.
John M. Davis, President

JMD/mr
cc: Dr. John A. Rogers
American Cancer Society, Illinois Division, Inc.
139 N. Clark Street
Chicago, Ill.

Dec. 2, 1958

Mr. John M. Davis, President
Committee For a Fair Test of Krebiozen
343 South Dearborn Street
Chicago 4, Illinois

Dear Mr. Davis:

We acknowledge receipt of your letter of Nov. 14. Its tenor is such that it requires a firm and complete response.

Apparently you have organized a pressure campaign to bludgeon the society into undertaking a test of the controversial substance, Krebiozen, on unscientific terms dictated by you and its proponents alone. You state, without any justification whatsoever, that the American Cancer Society is engaged in "intrigues" with the medical profession and that it is using the public's money not to further cancer research, but to retard it.

These tactics are apparently a continuance of the campaign of circulating scurrilous and unfounded accusations which was first instituted by the Freedom For Cancer Research Committee.

I would like to develop for you the circumstances which led up to a consideration by the society of the proposal made by Dr. Ivy last February.

In the summer of 1957, in response to the query of a science writer, we stated publicly, and to Dr. Ivy directly, that any proposal for an *objective* test of Krebiozen would receive careful consideration by our advisory committees and by our board. In February of 1958 the Krebiozen Research Foundation submitted a plan which has been carefully studied by these com-

mittees and by the board. In their collective responsible opinion, this plan did *not* provide for a valid and objective test of Krebiozen. We have made known to the Krebiozen Research Foundation the reasons for this decision.

We now both repeat and amplify these reasons because, in view of the pressures which your organization is attempting to mobilize, it appears to be desirable to inform the public more fully of the facts in this case.

In the first place, the society rejected Dr. Ivy's proposal because it called for a joint committee of the Krebiozen Research Foundation and of the American Cancer Society to arrange for and conduct a so-called "double blind controlled test." Under this plan it was further stipulated that the substance was to be administered to the patients solely by Dr. Ivy who is the principal spokesman for the drug. It was obvious to our advisory committees and to the board, and they felt it would be obvious to any fair-minded person, that a test under which the arrangements are to be made by a committee on which the promoters of the drug are represented equally with the group presumably responsible for the objectivity of the test, and in which the principal spokesman for the drug is the person to administer it to patients, was not objective within the scientific meaning of this word.

Our board considers that unless the test is carried out *wholly independently* of the Krebiozen Research Foundation, the results would have no real significance and would not be generally accepted by the doctors who treat cancer. The board felt that to assent to and participate in a test of the sort proposed by Dr. Ivy would, in effect, be aiding and abetting a procedure which could serve no useful purpose.

In the second place, the proposed test gave no basis for determining whether the substance, when administered by physicians generally, would produce the same results because no independent appraisal by others was to be permitted. To have validity, one of the primary criteria of any scientific experiment is the ability to duplicate it with similar or comparable results by other investigators.

In the third place, the proposal provided no definite standards for measuring either the results anticipated, or the results obtained. The final step in the test as proposed was to record Dr. Ivy's opinion as to which patients had been given Krebiozen and which had been given mineral oil. On a pure guesswork basis, he would have a 50-50 chance of being right. On the basis of his selection of patients who had received Krebiozen and those who had received mineral oil the cancer society would have been placed in the position of seeming to certify as to the efficacy of this drug. Our board felt that this would have only further confounded an already thoroughly confused situation and misled thousands of patients suffering from the disease.

Moreover, the proposal from the Krebiozen Research Foundation required that plans for a so-called "double blind controlled study" be agreed upon by the society prior to a study of the case histories of patients who have received the drug, which are stated to be on file with the foundation. Obviously, one would be working in a partial vacuum in attempting to define the conditions of any evaluation without knowledge of results already achieved.

There were other objections to the test but these were the essential reasons for our board taking the action it did.

The American Cancer Society is responsible not only for exploring all possible avenues in its search for an answer to cancer, but equally for protecting the public from the unhappy results which would follow if unjustified confidence were placed in any particular substance which would delay cancer victims from receiving the only treatments presently known to produce a cure – surgery or radiation.

However, there are now and there always have been channels open to Krebiozen which, if followed, will produce conclusive results.

The society does not operate clinics or research laboratories of its own and therefore cannot conduct tests itself. For many years, however, it has supported the experimental investigation of drugs and substances which may be useful in the management of cancer. Its purpose in this program is to provide support to qualified investigators in the expectation that from this program a cancer cure will be developed.

As we have repeatedly pointed out, the American Cancer Society would welcome any arrangement which Dr. Ivy makes with a responsible laboratory or clinic receiving financial support from the American Cancer Society for them to test Krebiozen as they are currently testing thousands of other drugs. The results of these

tests would then be published by the scientists or clinicians who carried them out, and Krebiozen would have to stand or fall, as does any other drug, on the collective results.

This research procedure has been responsible for the discovery and testing of the many compounds now being used in cancer therapy. To mention some which are being used by physicians in the treatment of this disease we list, Triethylene thiophosphoramide, Triethylene melamine and other nitrogen mustard derivatives, 6-mercaptopurine, 5-fluro-primidine derivatives, Methotrexate and other antimetabolites, isotopes, hormones and so on. If Krebiozen has a useful place in this armamentarium, it can be established beyond argument in the same way that the efficacy of these other drugs has been established.

The above facts make it clear that the society did not "refuse to test Krebiozen" but that it refused to participate in a procedure which, in its responsible opinion, would serve no useful scientific purpose and which might well have further misled the public.

To repeat, avenues of scientific appraisal are open for Krebiozen. What is closed is any proposal under which the cancer society would lend its name to a test which is not carried out on a scientifically acceptable basis. Any test in which the society is involved must be conducted and documented in accordance with the impeccable principles of the medical profession and the scientific community at large.

The society is not impressed by the signatures of people which are being collected under your stimulation and sent either to us or to members of the congress in Washington. Scientific truths are never established by petitions initiated or signed by persons with no knowledge of the scientific issues involved.

We note your proposal for a congressional investigation which is apparently advanced as a threat. The society has no reason to fear or object to any such investigation. Our affairs are managed by a board of 68 responsible citizens, half of them lay persons and half drawn from the medical and scientific professions. Our affairs are publicly reported in great detail. We cannot find that the same is true of the affairs of either the Krebiozen Research Foundation, or of the Committee For a Fair Test of Krebiozen, Inc. of which you are president.

In summary, it seems you are willing to damn without justification the medical profession and the American Cancer Society on behalf of your advocacy of an unproved substance, the manufacturing process of which is secret, and the chemical formula of which is not available. Moreover, it is apparent that you are attempting to persuade the public that this substance must have special treatment merely because that is the wish of those who are promoting it. In so doing you should also make it clear, as mentioned earlier in this letter, that we suggest as a prerequisite that the several hundred case histories of cancer patients treated with Krebiozen, which are claimed to be on file at the Krebiozen Research Foundation, should be made available to clinicians and researchers for their examination and that this wholly reasonable suggestion was refused unless, *as a prior condition*, the society agreed to proceed with the test on the basis outlined by Dr. Ivy.

Thus, although you were unwilling to produce whatever evidence there is in advance, you have demanded that the society commit itself in advance to procedures which, for the reasons we have given above, are unreliable and unscientific.

The onus of delay and of obstruction, which you attempt to place upon the society, rests clearly with those promoting Krebiozen and not with us nor with the medical profession. If there is any reliable evidence that Krebiozen is useful in the treatment of cancer, we believe you have a moral responsibility to submit this substance promptly to the scientific community for an assessment of its worth.

This is the position of the society whose affairs are directed by open-minded, public spirited citizens, serving in the interests of their fellow citizens without pay and without hope of personal gain.

Yours very truly,

MEFFORD R. RUNYON

NOTICE

The professional board of The Arizona Medical Association, Inc., has been informed that only some 38 per cent of the doctors of medicine in Arizona were reporting communicable diseases to the state department of health in accordance with Arizona statute.

The board stresses the importance and responsibility of the doctors to fill out their weekly report forms on communicable diseases and to mail them promptly.

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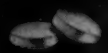

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Many patients with severe hypertension can be maintained on Rauwiloid alone after desired blood pressure levels are reached with combination medication.

Riker

Northridge, California

HEALTH CARE FOR OUR SENIOR CITIZENS

PREPAYMENT of medical care for the elderly has long been a matter of urgent and continuing concern to the medical profession and its Blue Shield Plans. Within the past year, however, this problem has been made something of a political issue through the introduction of such legislation as the Forand bill, which, if adopted, might radically affect the future of the entire voluntary health care movement in America.

What are the facts concerning Blue Shield coverage of senior citizens? What has the medical profession accomplished, through Blue Shield, to meet this challenge?

The answers to these questions will be of immediate interest as a new congress meets – a congress in which social welfare programs are certain to be accorded a high priority.

Some of these answers, as reported recently to AMA's council on medical service by the national association of Blue Shield Plans, are truly encouraging.

Thus, in 1951, among a total Blue Shield enrollment of 21 million persons, nearly a million, or a little less than 5 per cent, were over 65 years of age. Six years later, in 1957, among the total of *40 million* persons enrolled, 2¾ million, or 6.5 per cent, were over age 65. Thus, in these six years, the number of Blue Shield members over 65 increased 170 per cent, while total Blue Shield enrollment increased only about 85 per cent.

Attention was called also to the fact that of the total number of people past 65 who have medical-surgical insurance coverage, about two-thirds are covered by Blue Shield.

Of all the people in the U. S., it is estimated currently that about 15 million are over 65 years old, and are not cared for by an established institution or agency. This represents approximately 8 per cent of the total population. Thus Blue Shield's ratio of 6.5 per cent over age 65 is reasonably related even now to the ratio of the total population in that group – and rapidly approaching parity with it.

Blue Shield has always sought to serve medicine's inescapable responsibility to the *whole* community. It was until recently almost an exclusively Blue Shield feature that any member on retirement, or on leaving an insured group, could retain his coverage by "conversion" to a "direct-pay" basis. Few plans impose any age limits on initial group enrollment, and an increasing number of plans are accepting non-group members regardless of age.

Blue Shield is aware of medicine's responsibility to our senior citizens, and is prepared to follow the guidance and leadership of the profession in helping it meet this challenge.

Relative to the senior citizen, our own Arizona Blue Cross-Blue Shield Plan is now making plans for an introduction of an expanded program along these lines. An announcement will be forthcoming on this shortly.

THE PACIFIC DERMATOLOGICAL ASSOCIATION ANNOUNCES THE FIRST ANNUAL NELSON PAUL ANDERSON PRIZE ESSAY CONTEST

THE Los Angeles Dermatological Society, Inc. has established a Nelson Paul Anderson Memorial Fund which offers a $500 cash award annually for a minimum of five years, for a winning essay to be read by the essayist at the annual meeting of the Pacific Dermatological Association. The Pacific Dermatological Association will pay the basic expenses (transportation, room and board) of the winning essayist to, at, and from the meeting.

The essays eligible for this contest shall report original work, not previously published, formally presented, or previously prize-winnig, relative to some fundamental aspect of dermatology.

The essays shall be judged on the following considerations: a. Originality of ideas, b. Potential importance of the work, c. experimental methods and use of controls, d. evaluation of results, and e. clarity of presentation.

The essays shall be submitted under a "nom de plume" with no information anywhere in the paper which might lead to the recognition, by the judges, of the institution or clinic at which the work was done. The essay with "nom de plume" shall be accompanied by a plain, sealed

envelope enclosing the name and address of the author; this envelope shall not be opened until the judging is complete.

The contest shall be open only to physicians engaged in the study or practice of dermatology, who are working within the geographical limits encompassed by the Pacific Dermatological Association.

The essays will be judged by a committee of five judges, appointed by the executive council of the Pacific Dermatological Association, and all entries should be in the hands of Louis H. Winer, M.D., 9915 Santa Monica Blvd., Beverly Hills, Calif., in quintuplicate (all copies clearly legible, of course) before May 1, 1959. The winner will be notified by Aug. 1, 1959; the 1959 meeting of the Pacific Dermatological Association will be held at the La Playa Hotel, Carmel-by-the-Sea, Calif., Sept. 9 to 13, 1959.

Dr. Nelson Paul Anderson, one of the greatest dermatologists ever produced in the United States, died Dec. 1, 1957, at the age of 58.

The establishment of the Nelson Paul Anderson Prize Essay Contest demonstrates in part the great affection and esteem in which he was held by his fellow dermatologists.

INTERNATIONAL ACADEMY OF PROCTOLOGY 1958-1959 AWARD CONTEST

THE International Academy of Proctology announces its anual Cash Prize and Certificate of Merit Award Contest for 1958-1959. The best unpublished contribution on proctology or allied subjects will be awarded $100 and a Certificate of Merit. The winning contribution will be selected by a board of impartial judges, and all decisions are final.

The formal award of the first prize, and presentation of other certificates, will be made at the annual convention dinner dance of the International Academy of Proctology, April 8, 1959, at the Plaza Hotel, New York, N. Y.

The International Academy of Proctology reserves the exclusive right to publish all contributions in its official publication, The American Journal of Proctology. All entries are limited to 5,000 words, must be typewritten in English, and submitted in five copies. All entries must be received no later than Feb. 1, 1959. Entries should be addressed to:

ALFRED J. CANTOR, M.D.,
Executive Officer,
International Academy of Proctology,
147-49 Sanford Ave.,
Flushing 55, N. Y.

THE ARIZONA MEDICAL ASSOCIATION, INC. LOCATION INQUIRIES

ALVAREZ, UBALDO ANTONIO, M.D., 4817 13th St., N., Arlington, Va.; *OB/GYN;* 1953 graduate of University of Cartagena, Columbia, S.A.; interned at Hotel Dieu Hospital in New Orleans, La.; served residency at St. Barnabas Hospital in Minneapolis, Minn. and Columbia Women's Hospital in Washington, D.C.; took basic science examination in Virginia in December 1958; military status, 5-A; age 32; married. Interested in group or associate practice. Available July 1, 1959.

CLARK, EDWARD E. JR., M.D., Thomas Dee Hospital, Ogden, Utah; *GP;* 1958 graduate of University of Missouri; interning at Thomas Dee Hospital; holds license in Missouri, national board part I and II passed; fulfilled military obligations; age 28; married. Interested in assistant or associate practice. Available immediately.

FORTIER, QUINCY ERNEST, M.D., 607 South Fifth St., Las Vegas, Nev.;*OB/GYN;* 1944 graduate of the University of Minnesota; interned at Wichita Falls Clinic in Texas; served residency at University of Minnesota Hospital in Minneapolis; fulfilled military obligations; age 46; married. Holds licenses in Texas, Nevada, Arizona, California, Minnesota and Puerto Rico; interested in group or industrial practice. Available immediately.

GRUNDY, RICHARD D., M.D., 1119 E. Marion, Fort Worth 4, Texas; *GP;* 1958 graduate of Baylor College of Medicine in Houston, Texas; interning at John Peter Smith Hospital in Fort Worth, Texas; fulfilled military obligations; holds license in state of Texas; interested in clinic, assistant or associate practice; age 30; married. Available Aug. 1, 1959.

KAHN, KENNETH A., M.D., 2106 Jackson, San Francisco, Calif.; *I;* 1953 graduate of Colo-

rado Medical School; interned at Receiving Hospital in Detroit, Mich.; served residency at University of Minnesota and VA Hospital in Minneapolis, Minn.; interested in group or associate practice; age 32; married. Available July 1959.

KVAMME, LEIV, M.D., 810 Grovemont, Santa Ana, Calif.; *GP;* 1954 graduate of Tulane University Medical School; interned at Pierce County Hospital in Tacoma, Wash.; served residency at Pierce County Hospital; holds license in state of Washington; completed military service January 1959; interested in private practice. Age 36; married; available Feb. 1, 1959.

JAMES, MARVIN, M.D., Bellevue Hospital, 27th & First Ave., New York 16, N. Y.; *GS;* 1952 graduate of New York University College of Medicine; interned at Bellevue Hospital in New York; served residency at Bellevue Hospital; holds license in state of New York; fulfilled military obligations; interested in group practice; age 29; married. Available July 1959.

MORTLAND, S. RICHARD, M.D., P.O. Box 566, Ganado, Texas; *GP/S;* 1943 graduate of Vanderbilt University School of Medicine; interned at St. Thomas Hospital in Nashville, Tenn.; served residency in Waco, Texas — surgical preceptorship; fulfilled military obligations; holds license in Tennessee and Texas; interested in associate practice. Will consider solo or small clinic. Age 41; married. Available immediately.

VOSS, VIRGIL H., M.D., 1203B Perimeter Drive, Mobile, Ala.; *GP;* 1956 graduate of Stritch School of Medicine; interned at St. Josephs Hospital in Denver, Colo.; presently serving USAF — July 2, 1959 discharge; holds license in state of Colorado; interested in group, associate or partnership practice. Age 29; married; available August 1959.

LOCATION OPPORTUNITIES

ASHFORK — Pop. 700 — North centrally located — Railroad center — Contact the Women's Club, Ashfork, Ariz.

CAMP VERDE — Located in the heart of a large farming and ranching area on the Verde River. Approximately 100 miles north of Phoenix. Badly in need of a medical doctor. Contact Ivy N. Moser, R.N., Camp Verde, Ariz.

GILA BEND — Pop. 2,500 — 80 miles west of Phoenix — Nearest town to the Painted Rock Dam Project — Good opportunity for general practitioner. Cattle, cotton, and general farming. Office and equipment available. $150 monthly income from board of supervisors. Contact Mrs. J. F. Allison, Box 485, Gila Bend, Ariz.

HAYDEN — Pop. 3,000/4,000. Industrial practice — approximately 200 employes and dependents. Only part-time required. Coverage; Metropolitan Surgical Plan. Physician may engage in private practice also. Small company-owned clinical building (new) available for use, with X-ray equipment, diathermy equipment, etc. Full-time nurse available to assist; clerical work to be handled by company. Company housing facilities available for physician — small rental. Contact: American Smelting & Refining Company, Mr. Ben Roberts, department manager, P.O. Box 1111, El Paso, Texas.

HOLBROOK — Population above 7,000. Located in the heart of the northeastern pine country of Arizona on U.S. Route 66. Need services of GP. For full details, contact Donald F. DeMarse, M.D., Box 397, Holbrook, Ariz.

MIAMI — Opportunity for GP — Industrial hospital staffed by approximately seven doctors, who care for personnel and families of those who work for the three principal mining companies. Community served by many mining and ranching interests. Contact Robert V. Horan, M.D., Miami-Inspiration Hospital, Miami, Ariz.

MORENCI — Mining community near New Mexico-Arizona border. Pop. 10,000. Has vacancy at hospital for GP. Contact Carl H. Gans, M.D., Morenci Hospital, Morenci, Ariz.

PAGE — Population growing by leaps and bounds at the site of the new Glen Canyon Dam project. Current estimates are 6,000 to 8,000 total. Only one M.D. is now located in Page and he has facility available. Located about 90 miles north of Flagstaff, Ariz., the building project is estimated to be concluded in 10 years. Write Ivan W. Kazan, M.D., 16 H, Page, Ariz., for full details.

SAFFORD — Graham County Health Department in need of an M.D. In the heart of the cattle and farming areas of southeastern Arizona. Population of 10,500 and elevation is 2,920. Schools, churches and social facilities are numerous. Contact Mr. Verl Lines, chairman, Graham County Board of Supervisors, Safford, or Frederick W. Knight, M.D., 618 Central Ave., Safford.

ST. JOHNS – Seriously need a doctor of medicine, preferably a general practitioner, in this east-central Arizona community. Population is approximately 1,500 with several other small towns in the general area. About 20 miles from New Mexico in the beautiful rim country of Arizona. Contact Donald F. DeMarse, M.D., Box 397, Holbrook, Ariz.

TOLLESON – In need of GP. Serves a trading population of from 12,000 to 15,000. Ten miles west of Phoenix, with elementary and high schools, churches of all denominations. Complete office and equipment for GP is available on reasonable term lease or purchase. Contact Mr. Peter Falbo, president, chamber of commerce, 9112 West Van Buren St., Tolleson, Ariz.

TUCSON – The VA Hospital is in urgent need of an orthopedic surgeon. They prefer someone who is board certified, but would take someone who has had special training as they have the local men in this field available for consultation service. State license is necessary (but not necessarily an Arizona license). Contact S. Netzer, M.D., director, professional service, VA Hospital, Tucson, Ariz.

TUCSON – Young man interested in the practice of internal medicine for junior associateship, Southwestern Clinic & Research Institute, Inc. Excellent opportunity to achieve qualification in the specialty of internal medicine. Contact Charles A. L. Stephens Jr., M.D., 2430 East Sixth St., Tucson, Ariz.

FOR INFORMATION ON OPPORTUNITIES IN THE FIELD OF INDUSTRIAL MEDICINE, CONTACT:

Harold J. Mills, M.D., Phelps Dodge Hospital, Ajo, Ariz.

Carl H. Gans, M.D., Phelps-Dodge Hospital, Morenci, Ariz.

Ira E. Harris, M.D., Miami-Inspiration Hospital, Miami, Ariz.

Charles B. Huestis, M.D., Box 928, Hayden, Ariz.

Elvie B. Jolley, M.D., Copper Queen Hospital, Bisbee, Ariz.

H. W. Finke, M.D., Magma Copper Company Hospital, Superior, Ariz.

John Edmonds, M.D., Kennecott Copper Corporation Hospital, Ray, Ariz.

Francis M. Findlay, M.D., San Manuel Hospital, San Manuel, Ariz.

Future Meetings

SAVE THE TIME

to attend the 68th annual meeting of The Arizona Medical Association, Inc.

SCIENTIFIC SECTION

PAPERS to be presented by Haddon M. Carryer, M.D., Mayo Clinic; John W. Cline, M.D., Stanford University; Harold Dalton Jenkins, M.D., University of Colorado; Marvin E. Johnson, M.D., University of Colorado; Henry W. Kessler, M.D., Kessler Institute for Rehabilitation; Johannes Maagaard Nielsen, M.D.; and Thomas L. Royce, M.D., Baylor University.

MEDICAL EDUCATION WORKSHOP

Friday, May 1, 1959

As a special feature, presentations on medical education will be given by John Z. Bowers, M.D., University of Wisconsin; Fred Dow Fagg Jr., Ph.D., President, WICHE; Mr. Reuben Gustavson, president, Resources for the Future; Walter L. Hard, Ph.D., University of South Dakota; Marvin E. Johnson, M.D., University of Colorado; Vernon W. Lippard, M.D., Yale University; Roscoe L. Pullen, M.D., University of Missouri; Thomas L. Royce, M.D., Baylor University; and, Thomas B. Turner, M.D., Johns Hopkins University. Moderator: John W. Cline, M.D., Stanford University.

SAN MARCOS HOTEL CHANDLER, ARIZ.

April 30, May 1, 2, 1959

ELEVENTH ANNUAL CONVENTION INTERNATIONAL ACADEMY OF PROCTOLOGY

Eleventh Annual Convention of the International Academy of Proctology at the Plaza, New York, N. Y., April 5-9, 1959. The international, national, and local program committees are planning an unusual seminar on practical techniques for office and hospital. There will be special emphasis an anal and rectal panel presentations, and on newer treatment methods, as requested by those who attended the Mexico City meeting in 1958.

Woman's Auxiliary

PARAMEDICAL CAREERS COMMITTEE

THE NURSE recruitment committee of the medical auxiliary has, as of this year, been renamed the paramedical careers committee in order to include all allied health fields (technicians, therapists, dietitians, etc.) This was done at the request of the American Medical Association in orler to fill a need for more personnel in all the health fields.

RECENT EVENTS

National Honor Bestowed on Maricopa County Medical Auxiliary Film

Last year, the Maricopa Medical Auxiliary made a 16 mm film entitled, "Allied Medical Careers," to be shown in the high schools during the recruitment program. The film has since been chosen by the National Medical Auxiliary to be shown at their convention in June at Atlantic City. A request has also been received from the University of Nevada for a copy to be made for use in their recruitment program. We are all very proud of Mrs. John Clymer and her careers committee who put in long hours of work to make this film possible.

A copy of this well-received film will soon be available to all county auxiliaries who would like to see it.

Western Regional Nurses Work Shop

In November, The Western Regional Council for Nurses held a work shop in Phoenix. Our own national paramedical careers committee chairman, Mrs. Allie Jacobson, attended as one of the guest speakers.

The work shop provided the auxiliary with an excellent opportunity to acquaint the nurses with our new program including all health careers. The program was well received and the nurses association is most anxious to assist us in making it successful.

COMING EVENTS

Nurse Recruitment Week

The governor has proclaimed the first week in February: "Nurse Recruitment Week." We have requested that it be changed to "Health Careers Week," and feel sure it will be accepted within the year.

State Work Shop

A work shop is being planned in the near future by the Arizona State Nurses Association and the Arizona League for Nursing Education. The auxiliary is most fortunate in having been asked to participate in this project. The work shop will include information and participants from all health fields and will be directed mainly to the school counselors. In this respect, we will be able to better acquaint them with the requirements, personal and educational, as well as the facilities available for students interested in health careers. As you can see, the nurses association is most anxious to assist the auxiliary, and certainly no organization is in a better position to help us guide young people into allied health careers.

MRS. HOWARD M. PURCELL JR.
Chairman, State Paramedical
Careers Committee, Women's
Medical Auxiliary

CALENDAR OF MEETINGS

DATE	MEETINGS	PLACE
March		
9-12	AMA 4-day Sectional Meeting	St. Louis, Mo.
16-20	National Health Council Annual Meeting	Chicago, Ill.
30 - Apr. 2	Southwestern Surg. Congress	Denver, Colo.
April		
6-8	American Radium Society	Homestead Hotel, Hot Springs, Va.
6-9	American Academy of General Practice	San Francisco, Calif.
9-12	American Ass'n. for Cancer Research Inc.	Haddon Hall, Atlantic City, N. J.
20-23	American Ass'n. Pathologists & Bacteriologists	Boston, Mass.
20-24	American College of Physicians	Conrad Hilton Hotel, Chicago, Ill.
28 - May 2	Arizona Medical Association	Chandler, Ariz.